

THE STATE OF DELAWARE  
DEPARTMENT OF TRANSPORTATION



CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR:

CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT NUMBER: T200507103  
FEDERAL AID PROJECT NUMBER: N/A

COUNTY: NEW CASTLE M.R. #: 239

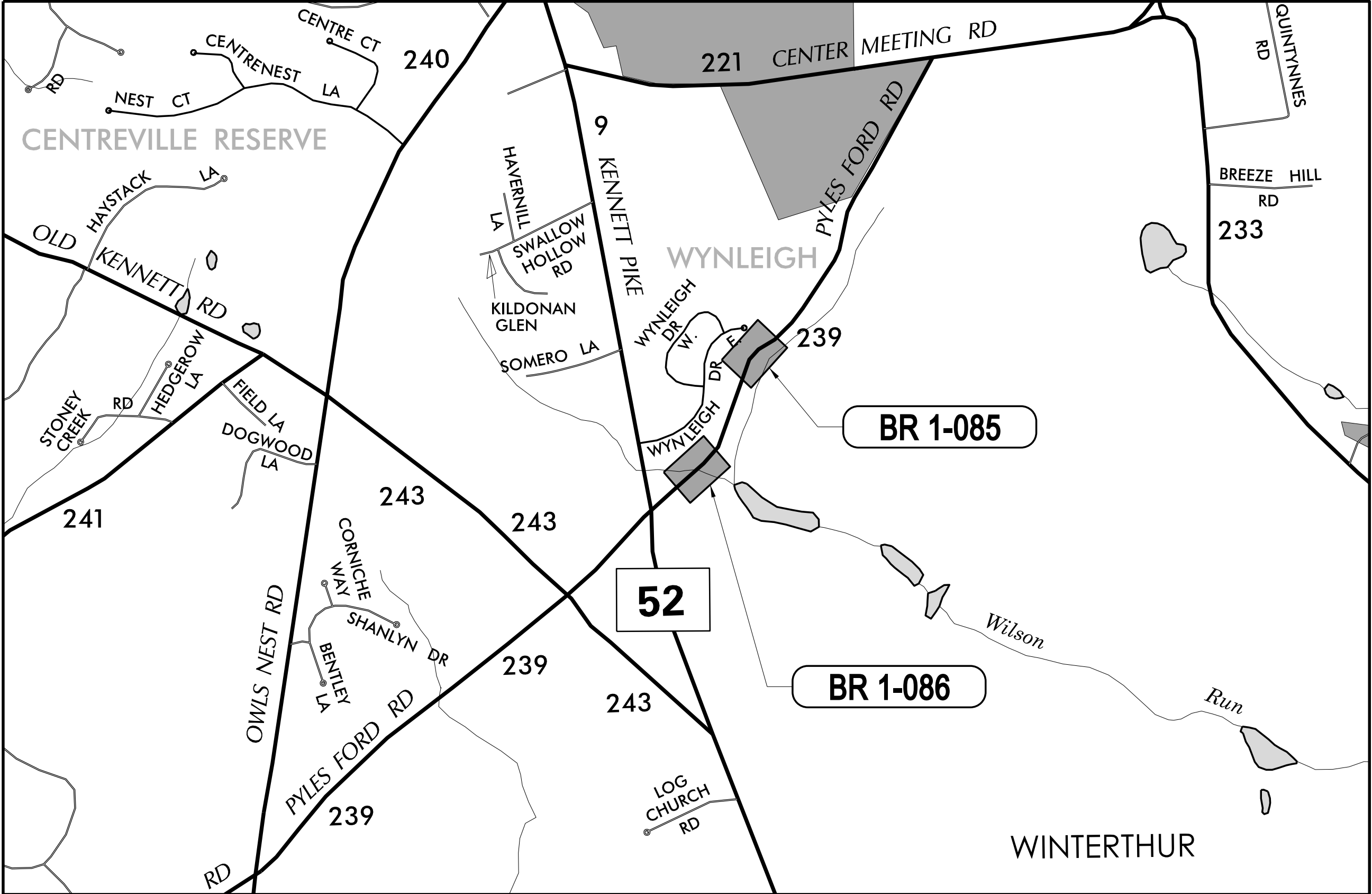
U.S. CUSTOMARY  
UNITS

DESIGN DESIGNATION			
MRD #: 239		ROAD NAME: PYLES FORD ROAD	
FUNCTIONAL CLASS: LOCAL ROAD		D.H.V. PROJECTED:	YEAR:
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT		DESIGN SPEED: 30 M.P.H.	
A.A.D.T. CURRENT: 280	YEAR: 2011	TRUCKS: 7 %	
A.A.D.T. PROJECTED:	YEAR:	DIRECTION OF DISTRIBUTION: 65 %	
APPROVED DESIGN EXCEPTIONS			
DESIGN PARAMETER	REQUIRED	PROVIDED	DATE
MINIMUM HORIZONTAL CURVE RADIUS	185 ft	128 ft	1/28/09
SUPERELEVATION RATE (%)	6%	2%	1/28/09
STOPPING SIGHT DISTANCE	205 ft	150 ft	1/28/09
ADDENDA / REVISIONS			
ASSOCIATED CONTRACTS			
CONTRACT NO.	CONTRACT NAME		

APPROVED FOR ADVERTISEMENT

*Shirley*  
DIRECTOR OF TRANSPORTATION SOLUTIONS

07/02/2020  
DATE



PREPARED BY  
DELDOT - TRANSPORTATION SOLUTIONS  
BRIDGE DESIGN

*Nicholas E. Dean*

THIS SEAL APPLIES TO ALL SHEETS  
BEARING THE "BR" SECTION DESIGNATION.

06/30/2020  
DATE

NICHOLAS E. DEAN  
LICENSED  
No. 20419  
DELAWARE  
PROFESSIONAL ENGINEER

SEAL

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				T200507103	DESIGNED BY: GCL III / SR			BR
				COUNTY				SHEET NO.
				NEW CASTLE	CHECKED BY: NED	2		



ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	1-085 & 1-086	ADDENDA AND REVISIONS	SECTION
				T200507103	DESIGNED BY: GCL III / SR			
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EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MONUMENT
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY NGS POINT LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER CLEANOUT OR VENT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITIES	
	DELDOT - ITMS CONDUIT
	DELDOT - LIGHTING CONDUIT
	DELDOT - SIGNAL CONDUIT
	DELMARVA POWER - ELECTRIC
	COMCAST CABLE
	VERIZON

PROPOSED SYMBOLS

IDENTIFIERS	
	ABANDON BY CONTRACTOR
	ABANDON BY OTHERS
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	BEST MANAGEMENT PRACTICE
	BUS STOP PAD / TYPE
	BUS STOP WITH SHELTER PAD / TYPE
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING - SUMP / ON GRADE
	CURB OPENING WITH SIDEWALK
	DRAINAGE INLET
	DO NOT DISTURB
	ENERGY DISSIPATOR
	FENCE
	FLARED END SECTION
	FILL WITH FLOWABLE FILL
	GUARDRAIL
	JUNCTION BOX
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PEDESTRIAN CONNECTION / TYPE WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	RELOCATE BY PROPERTY OWNER
	REMOVE BY CONTRACTOR
	REMOVE BY TRAFFIC CONTRACTOR
	REMOVE BY OTHERS
	RIPRAP
	SAFETY END SECTION
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

CONSTRUCTION	
	BARRIER, DOUBLE-FACED, PERMANENT
	BARRIER, SINGLE-FACED, PERMANENT, TL-4 / TL-5
	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CLEAR ZONE
	CONSTRUCTION BASELINE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB OPENING - SUMP / ON GRADE
	CURB OPENING WITH SIDEWALK
	DRAINAGE INLET
	DITCH
	FENCE - METAL / FENCE - WOOD
	FLARED END / SAFETY END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	LATERAL OFFSET
	LIMIT OF CONSTRUCTION
	MAILBOX
	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	RIGHT-TO-ENTER
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

PAVEMENT SECTION(S)

	1 1/4" WMA, SUPERPAVE, TYPE C HOTMIX 2 1/4" WMA, SUPERPAVE, TYPE B HOTMIX 8" GRADED AGGREGATE BASE COURSE, TYPE B
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TRAFFIC

	CONDUIT - ITMS
	CONDUIT - LIGHTING
	CONDUIT - SIGNAL
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

UTILITIES

	DELMARVA POWER - ELECTRIC
	COMCAST CABLE
	VERIZON

EROSION & SEDIMENT CONTROL

	COMPOST FILTER LOG
	COMPOST FILTER LOG / LENGTH
	DEWATERING BAG
	DEWATERING BASIN
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE / LENGTH
	SILT FENCE
	REINFORCED SILT FENCE / LENGTH
	REINFORCED SILT FENCE
	SUPER SILT FENCE / LENGTH
	SUPER SILT FENCE
	SUMP PIT
	SEDIMENT TRAP / NUMBER
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
	TURBIDITY CURTAIN

ADDENDA / REVISIONS

NOT TO SCALE

CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT

T200507103

COUNTY

NEW CASTLE

BRIDGE NO.

1-085 & 1-086

DESIGNED BY:

GCL III / SR

CHECKED BY:

NED

LEGEND

SECTION

BR

SHEET NO.

4



GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

( )	NONE
( )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
( X )	ALL PLAN SHEETS, IN PDF FORMAT.
( )	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( )	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( )	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

( )	CROSS SECTIONS
( X )	RIGHT-OF-WAY PLANS (INCLUDED IN PLAN SET)

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

SECTION 200

2. CLEARING AND GRUBBING
- A. TREE TRIMMING AND REMOVAL NECESSARY FOR UTILITY RELOCATION SHALL BE COMPLETED BY OTHERS PRIOR TO ADVANCE UTILITY RELOCATION.
- B. ADDITIONAL CLEARING AND GRUBBING AS NECESSARY AT EACH BRIDGE SITE SHALL BE COMPLETED BY THE CONTRACTOR, SUBJECT TO THE RESTRICTIONS OUTLINED IN THE ENVIRONMENTAL COMPLIANCE NOTES.
3. ALL EXISTING PAVEMENT FROM STA. 4+70 TO STA. 18+21 AS SHOWN ON THE CONSTRUCTION PLANS SHALL BE EXCAVATED IN ITS ENTIRETY. PAYMENT FOR HOTMIX REMOVAL UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT.
4. SHORING SHALL BE REQUIRED FOR ANY EXCAVATION EXCEEDING 5 FEET IN HEIGHT. THE COST OF SHORING SHALL BE INCIDENTAL TO ITEM 207000 - EXCAVATION AND BACKFILL FOR STRUCTURES. IN LIEU OF SHORING, THE CONTRACTOR MAY USE A 2:1 CUT SLOPE. NO PAYMENT SHALL BE MADE FOR ADDITIONAL EXCAVATION OR FILL OUTSIDE THE LIMITS AS DEFINED IN EITHER SECTION 207 OF THE STANDARD SPECIFICATIONS.
5. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- BRIDGE 1-086 - THE EXISTING STRUCTURE (CONSISTING OF CONCRETE SLAB, STONE MASONRY ABUTMENTS AND WINGWALLS), CHAINLINK FENCE AND GUARDRAIL
- BRIDGE 1-085 - THE EXISTING STRUCTURE (CONSISTING OF STONE MASONRY TRIANGLE CULVERT AND WINGWALLS), CORRUGATED PIPE EXTENSION AND CHAINLINK FENCE. REMOVAL OF THIS STRUCTURE IS SUBJECT TO ADDITIONAL CONDITIONS DESCRIBED ON THE ENVIRONMENTAL COMPLIANCE NOTES AND PLAN. CONCRETE BARRIER SHALL BE RETURNED TO DELDOT MAINTENANCE.
6. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S TEAM SUPPORT SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

SECTION 300

7. A. THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
- a. CRUSHED STONE (PER STANDARD SPECIFICATION 821)
- b. CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)
- c. HOT-MIX MILLINGS (PER SPECIAL PROVISION 302514 MILLED HOT-MIX BASE COURSE)

THE CONTRACTOR WILL NOT BE ALLOWED TO MIX DIFFERENT MATERIALS (OR SIMILAR MATERIALS FROM DIFFERENT SOURCES) TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

ALL OF THE ABOVE LISTED MATERIALS ARE PERMITTED FOR USE ON THE JOB, PROVIDED THEY ARE SEPARATED INTO APPROVED AREAS. EACH AREA OF BASE COURSE MUST BE CONSTRUCTED USING MATERIALS FROM A SINGULAR SOURCE, FULL DEPTH, IN ORDER THAT PROPER TESTING MAY BE ACCOMPLISHED. THE CONTRACTOR AND ENGINEER SHALL AGREE ON THE LIMITS OF EACH SOURCE OF MATERIAL PRIOR TO PLACEMENT.

- B. THE QUANTITY USED FOR BASE OF EACH OF THE ABOVE LISTED MATERIALS WILL BE THE CONTRACTOR'S CHOICE, WITH THE TOTAL BEING EQUAL TO THE ACTUAL QUANTITY USED UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.
- C. THE CONTRACTOR MAY ALSO ELECT TO RECYCLE MILLINGS FOR USE IN HOT-MIX AS PERMITTED BY THE STANDARD SPECIFICATIONS. THE CHOICE OF THE QUANTITY OF MILLINGS USED FOR THIS PURPOSE, OR FOR BASE COURSE, LIES WITH THE CONTRACTOR. ALL EXCESS MILLING MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR.
- D. HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
- a. MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER ITEM 202000.
- b. MILLED MATERIAL FURNISHED ON THE JOB FROM THE CONTRACTOR'S YARD OR OTHER OUTSIDE SOURCE. ALL MILLED MATERIALS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 302514 - MILLED HOT-MIX BASE COURSE.
- E. PAYMENT CLARIFICATION:
- a. SHOULD THE CONTRACTOR ELECT TO MILL PORTIONS OF HOT-MIX SHOWN ON THE PLANS TO BE REMOVED UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT THE COST OF MILLING THIS HOT-MIX WILL BE PAID AS ITEM 202000 - EXCAVATION AND EMBANKMENT. THE MILLINGS GENERATED MAY BE RECYCLED INTO HOT-MIX, UTILIZED FOR BASE COURSE, OR DISPOSED OF TO AN APPROVED SITE. HAULING COSTS FOR DISPOSAL AND/OR RECYCLING ARE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.
- b. SHOULD THE CONTRACTOR ELECT TO TEMPORARILY STOCKPILE MILLINGS ON THE JOB SITE FOR LATER USE, ALL COSTS FOR STOCKPILING AND SUBSEQUENT REHANDLING SHALL BE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.
- c. MILLINGS USED FOR BASE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE. NO SEPARATE PAYMENT WILL BE MADE TO FURNISH MILLINGS FROM AN OUTSIDE SOURCE OR TRANSPORT MILLINGS WITHIN THE PROJECT LIMITS. MILLINGS USED FOR BASE COURSE WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.
- d. ALL COSTS TO UTILIZE MILLINGS IN RECYCLED HOT-MIX WILL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE HOT-MIX ITEM USING THE RECYCLED MATERIAL.
- e. SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE IS PROVIDED TO SPECIFY THE MEANS OF LAY DOWN AND COMPACTION AS WELL AS THE MATERIAL REQUIREMENTS FOR MILLINGS USED AS BASE COURSE. ALL COSTS TO BRING THE MILLINGS INTO COMPLIANCE WITH THE REQUIREMENTS OF ITEM - 302514 MILLED HOT-MIX BASE COURSE ARE INCIDENTAL TO ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'. NO PAYMENT WILL BE MADE FOR ITEM 302514 - MILLED HOT-MIX BASE COURSE. THE QUANTITY OF MILLINGS USED FOR BASE COURSE WILL BE PAID FOR UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE.

SECTION 600

8. LIMITS OF COARSE AGGREGATE FOR FOUNDATION STABILIZATION SHALL EXTEND 18" OUTSIDE OF THE NEAT LINE PERIMETER OF THE VERTICAL FACES OF ANY FOOTER, ENCASEMENT OR STRUCTURAL UNIT.

SECTION 700

9. ALL PAVED AREAS TO BE REPLACED OR OVERLAYED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT. ALL HOT-MIX SAWCUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
10. ALL GEOTEXTILES SHALL BE KEYED UNDER ADJACENT SOIL OR RIPRAP A MINIMUM OF 6" IN LENGTH TO PREVENT FREE EDGES.
11. THE CONTRACTOR SHALL UTILIZE THE EXISTING MOT/DETOUR SET UP AND MAINTAINED BY THE DEPARTMENT. ANY CHANGES TO THE APPROVED MOT CONFIGURATION AND DETOUR PLAN BY THE CONTRACTOR WILL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. FENCE
- BRIDGE 1-086 - FENCE ON PARCEL 1-L SHALL BE REMOVED BEFORE UTILITY RELOCATION BY THE DEPARTMENT AS NECESSARY BETWEEN STA. 4+90 AND 8+00 WHERE IT CONFLICTS WITH PROPOSED CONSTRUCTION. THE FENCE SHALL BE REPLACED BEHIND THE PROPOSED UTILITY POLE LOCATIONS BY THE CONTRACTOR AFTER THE COMPLETION OF CONSTRUCTION. ON PARCEL 2-R, THE EXISTING FENCE SHALL BE REMOVED BEFOREHAND BY OTHERS FROM STA. 5+90 TO 7+50 BEFORE UTILITY RELOCATION. IT SHALL BE RELOCATED AT THE PE #1 LINE BY THE CONTRACTOR AFTER THE COMPLETION OF CONSTRUCTION. THE STREAM CROSSING FENCE SECTION SHALL BE RE-INSTALLED AT THE PROPOSED LOCATION BY THE CONTRACTOR AFTER THE COMPLETION OF CONSTRUCTION. PAYMENT UNDER ITEM 727004 - CHAIN-LINK FENCE, 6' HIGH.
- BRIDGE 1-085 - ANY REMAINING EXISTING FENCE BETWEEN STA. 17+00 AND 17+60 SHALL BE REMOVED AS NECESSARY.

MISCELLANEOUS

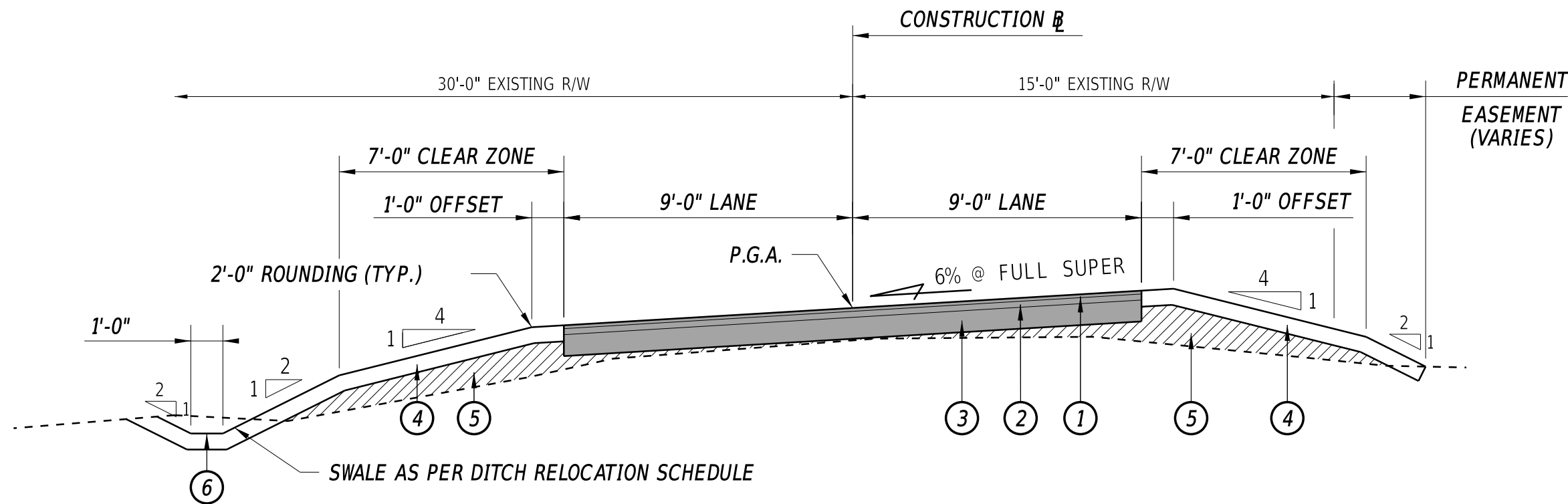
13. DESIGN CRITERIA
- 2010 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th EDITION, USING AASHTO HL93 FOR LIVE LOAD, 25 psf FOR FUTURE WEARING SURFACE.
14. HYDRAULIC DATA
- BRIDGE 1-086
- DRAINAGE AREA = 0.29 sq.miles
- DESIGN FREQUENCY = 25 years
- DESIGN DISCHARGE = 226 cfs
- 25 yr FLOOD ELEVATION = 306.53 ft
- PROPOSED OPENING = 37.33 SF
- BRIDGE 1-085
- DRAINAGE AREA = 0.10 sq.miles
- DESIGN FREQUENCY = 25 years
- DESIGN DISCHARGE = 105 cfs
- 25 yr FLOOD ELEVATION = 323.86 ft
- PROPOSED OPENING = 21.0 SF
15. SCOUR ANALYSIS
- THE PROPOSED STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH HEC-18 - 'EVALUATING SCOUR AT BRIDGES' AND HEC-14 - 'HYDRAULIC DESIGN OF ENERGY DISSIPATORS.' SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORST CASE OF THE OVERTOPPING FLOOD OR THE SCOUR DESIGN FLOOD EVENT.
- BRIDGE 1-086
- DESIGN EVENT = OVERTOPPING
- DESIGN DISCHARGE = 264 cfs
- DESIGN VELOCITY = 6.13 ft/s
- DESIGN DEPTH OF FLOW = 3.31 ft
- BRIDGE 1-085
- DESIGN EVENT = OVERTOPPING
- DESIGN DISCHARGE = 144 cfs
- DESIGN VELOCITY = 6.20 ft/s
- DESIGN DEPTH OF FLOW = 2.38 ft
16. ENVIRONMENTAL COMPLIANCE
- REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR ANY RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED TO THIS PROJECT.
17. STAGING AND STOCKPILING
- STAGING AND STOCKPILING AREAS ARE SHOWN ON THE ENVIRONMENTAL COMPLIANCE PLAN SHEETS. STAGING AND STOCKPILING AREAS CAN BE CHANGED WITH THE APPROVAL OF THE DEPARTMENT. THESE AREAS SHALL NOT BE MOVED OUTSIDE OF THE EXISTING ROADWAY. ALL SOIL ERODIBLE STOCKPILES SHALL BE COVERED AND SECURED WITH AN IMPERVIOUS COVER.
18. LOAD RATING SUMMARY - SEE TABLE ON TYPICAL SECTIONS SHEET
19. PYLES FORD ROAD, FROM INTERSECTION AT RT 52 TO STA 4+70, SHALL RECEIVE A 2" MILL AND OVERLAY, WITH PATCHING WHERE NEEDED. PAVEMENT FROM STA 4+70 TO STA 18+21 WILL BE FULL DEPTH REPLACEMENT. PAVEMENT WIDTH BETWEEN STA 9+00 TO STA 14+25 SHALL MATCH EXISTING WIDTH. STA 18+21 TO THE INTERSECTION OF CENTER MEETING ROAD, SHALL RECEIVE A 2" MILL AND OVERLAY, WITH PATCHING WHERE NEEDED.
20. ALL PROPOSED FENCE SHALL TIE IN TO THE EXISTING FENCE.

ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	1-085 & 1-086	NOTES	SECTION
				T200507103	DESIGNED BY: GCL III / SR	BR		
				COUNTY				SHEET NO.
				NEW CASTLE	CHECKED BY: NED	5		

LEGEND	
①	ITEM 401826 - 1½" WMA, SUPERPAVE, TYPE "C" HOT MIX, 115 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
②	ITEM 401809 - 2½" WMA, SUPERPAVE, TYPE "B" HOT MIX, 115 GYRATIONS, PG 64-22
③	ITEM 302007 - 8" GRADED AGGREGATE BASE COURSE TYPE 'B'
④	ITEM 908014 - 6" TOPSOIL AND PERMANENT GRASS SEEDING DRY GROUND
⑤	ITEM 210000 - 'C' BORROW FILL
⑥	ITEM 908020 - EROSION CONTROL BLANKET MULCH IN DITCH FLOWLINES

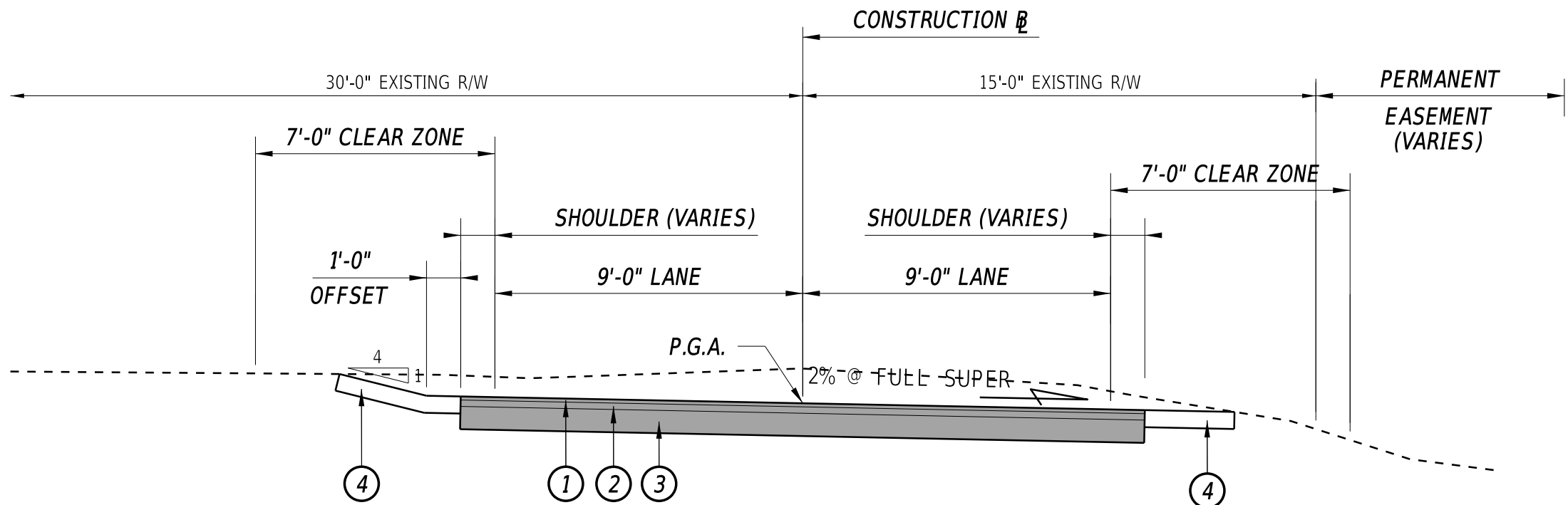
BR 1-086 LOAD RATING SUMMARY					
DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.23	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TANDEM (INVENTORY)	1.40	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK TRAIN (INVENTORY)	N/A	N/A	N/A	N/A	N/A
HS-20 (INVENTORY)	1.23	44.12	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK (OPERATING)	1.59	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TANDEM (OPERATING)	1.82	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK TRAIN (OPERATING)	N/A	N/A	N/A	N/A	N/A
HS-20 (OPERATING)	1.59	57.20	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S220 & LEGAL-LANE (LEGAL)	2.19	43.81	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S335 & LEGAL-LANE (LEGAL)	1.61	56.42	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S437 & LEGAL-LANE (LEGAL)	2.18	79.77	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T330 & LEGAL-LANE (LEGAL)	2.21	66.22	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T435 & LEGAL-LANE (LEGAL)	2.20	77.11	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T540 & LEGAL-LANE (LEGAL)	2.20	87.83	SPAN 1: INTERIOR BEAM	110	SHEAR
NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.					

BR 1-085 LOAD RATING SUMMARY					
DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	1.23	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TANDEM (INVENTORY)	1.40	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK TRAIN (INVENTORY)	N/A	N/A	N/A	N/A	N/A
HS-20 (INVENTORY)	1.23	44.12	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK (OPERATING)	1.59	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TANDEM (OPERATING)	1.82	N/A	SPAN 1: INTERIOR BEAM	110	SHEAR
HL-93 TRUCK TRAIN (OPERATING)	N/A	N/A	N/A	N/A	N/A
HS-20 (OPERATING)	1.59	57.20	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S220 & LEGAL-LANE (LEGAL)	2.19	43.81	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S335 & LEGAL-LANE (LEGAL)	1.61	56.42	SPAN 1: INTERIOR BEAM	110	SHEAR
DE S437 & LEGAL-LANE (LEGAL)	2.18	79.77	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T330 & LEGAL-LANE (LEGAL)	2.21	66.22	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T435 & LEGAL-LANE (LEGAL)	2.20	77.11	SPAN 1: INTERIOR BEAM	110	SHEAR
DE T540 & LEGAL-LANE (LEGAL)	2.20	87.83	SPAN 1: INTERIOR BEAM	110	SHEAR
NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.					



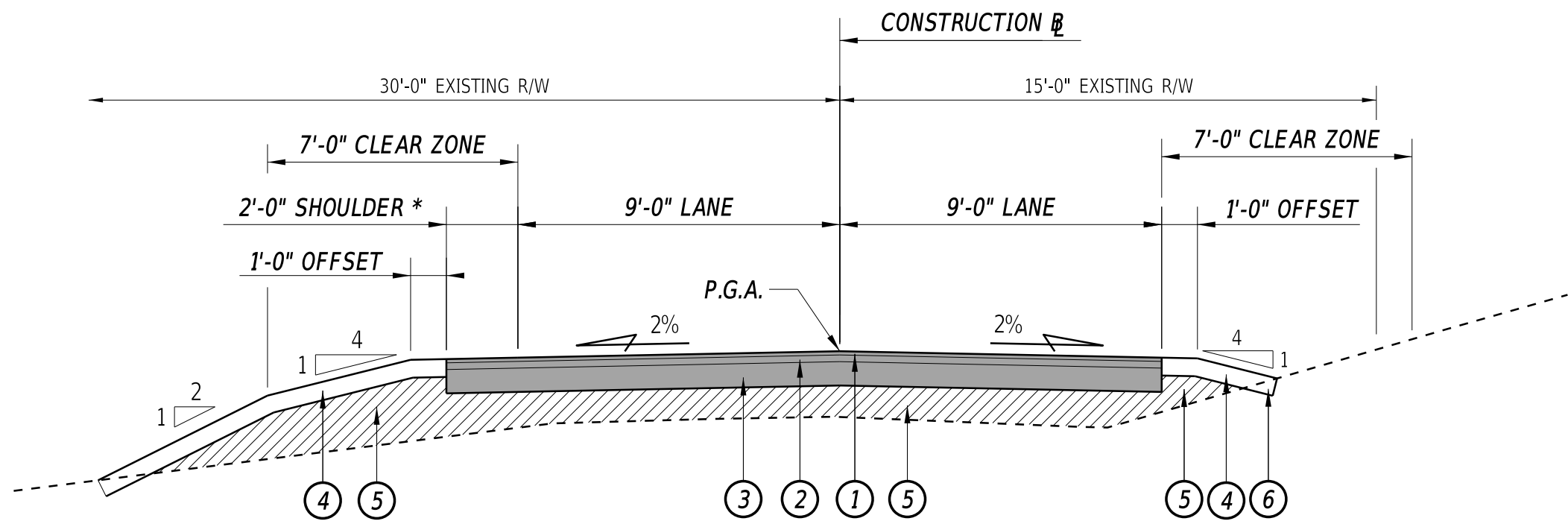
TYPICAL SUPERELEVATED SECTION - BRIDGE 1-086

1/4" = 1' - 0"



TYPICAL SUPERELEVATED AND SECTION - BRIDGE 1-085

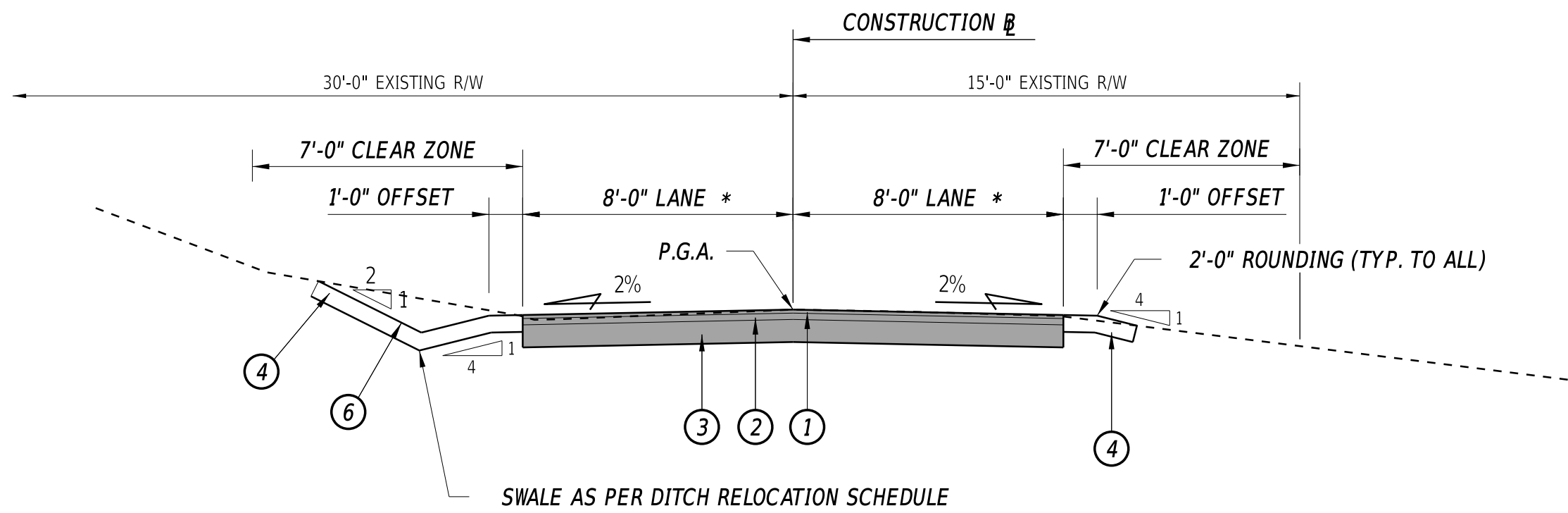
1/4" = 1' - 0"



\* - SEE CONSTRUCTION PLAN FOR SHOULDER LIMITS

TYPICAL NORMAL CROWN SECTION - BRIDGE 1-086

1/4" = 1' - 0"



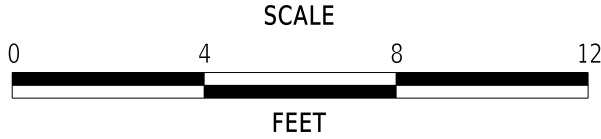
\* - SEE CONSTRUCTION PLAN FOR TRANSITION TO 9'-0" LANES

TYPICAL NORMAL CROWN SECTION - BRIDGE 1-085

1/4" = 1' - 0"

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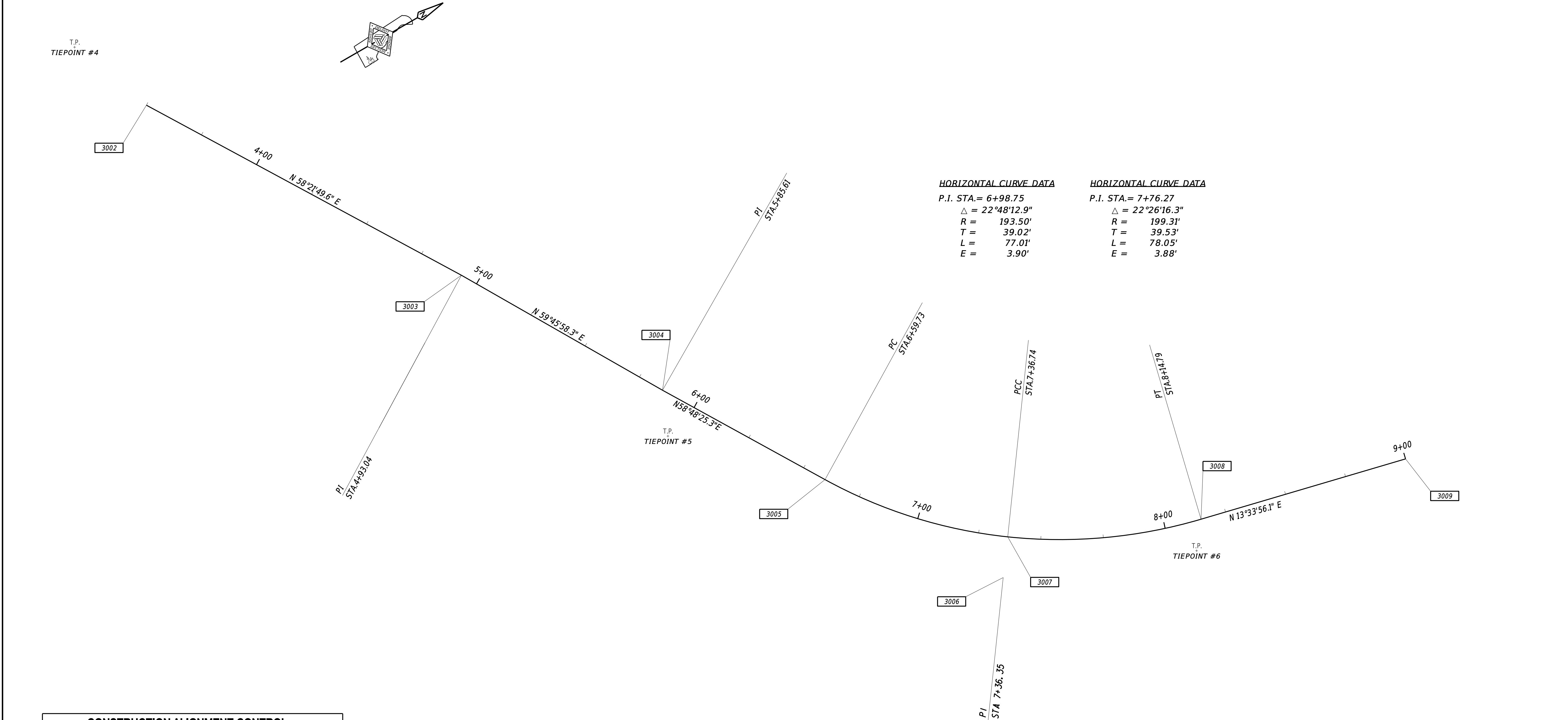
ADDENDA / REVISIONS	



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-085 & 1-086	TYPICAL SECTIONS	SECTION
T200507103	DESIGNED BY:	GCL III / SR		BR
COUNTY	CHECKED BY:	NED		SHEET NO.
NEW CASTLE				6

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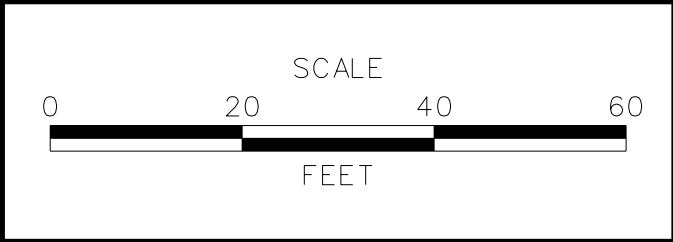


CONSTRUCTION ALIGNMENT CONTROL				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
3002	3+50.00	0.00	659301.45	601208.07
3003	4+93.04	0.00	659376.48	601329.86
3004	5+85.61	0.00	659423.09	601409.83
3005	6+59.73	0.00	659461.48	601473.23
3006	7+36.35	16.37	659503.56	601542.74
3007	7+36.74	0.00	659513.26	601529.56
3008	8+14.79	0.00	659583.67	601562.07
3009	9+00.00	0.00	659666.50	601582.05

HORIZONTAL / VERTICAL CONTROL DATA					
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEV.
4	3+17.98	-10.01	659293.18	601175.56	313.55
5	6+00.58	11.73	659420.81	601428.71	306.54
6	8+14.86	12.29	659580.85	601574.03	605.34

DATUM REFERENCE:  
HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83 / 2011 / EPOCH 2010.00).  
VERTICAL - THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88 BASED ON MODELED GEOID 12A).

ADDENDA / REVISIONS	

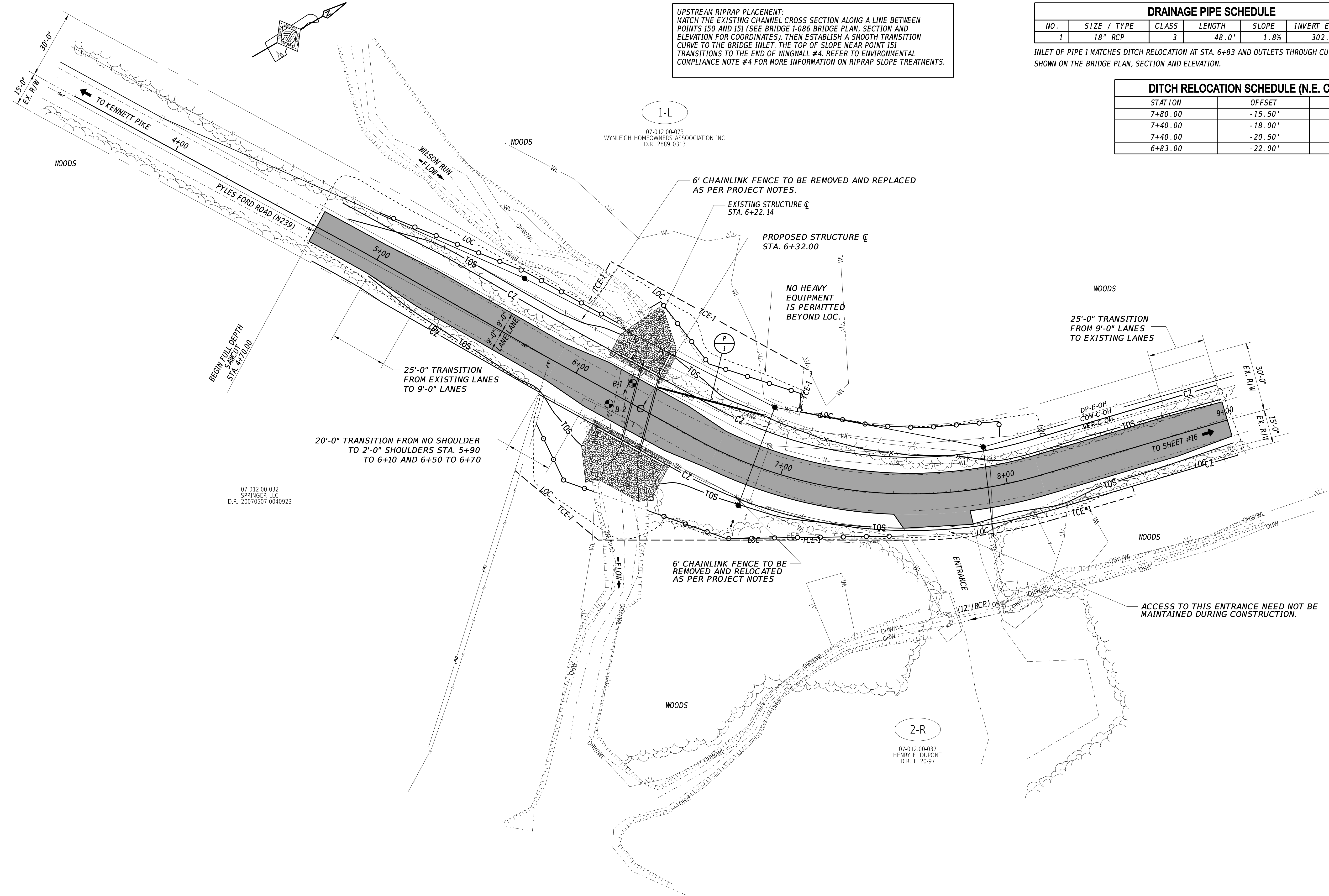


CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

HORIZONTAL AND VERTICAL CONTROL	
SECTION	BR
SHEET NO.	7





UPSTREAM RIPRAP PLACEMENT:  
MATCH THE EXISTING CHANNEL CROSS SECTION ALONG A LINE BETWEEN  
POINTS 150 AND 151 (SEE BRIDGE 1-086 BRIDGE PLAN, SECTION AND  
ELEVATION FOR COORDINATES). THEN ESTABLISH A SMOOTH TRANSITION  
CURVE TO THE BRIDGE INLET. THE TOP OF SLOPE NEAR POINT 151  
TRANSITIONS TO THE END OF WINGWALL #4. REFER TO ENVIRONMENTAL  
COMPLIANCE NOTE #4 FOR MORE INFORMATION ON RIPRAP SLOPE TREATMENTS.

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INVERT EL.	DIS. EL.
1	18" RCP	3	48.0'	1.8%	302.70	301.85

INLET OF PIPE 1 MATCHES DITCH RELOCATION AT STA. 6+83 AND OUTLETS THROUGH CULVERT WALL AS SHOWN ON THE BRIDGE PLAN, SECTION AND ELEVATION.

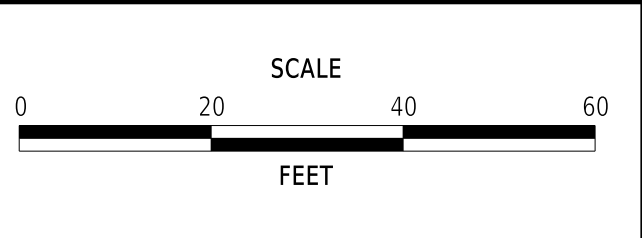
DITCH RELOCATION SCHEDULE (N.E. CORNER)		
STATION	OFFSET	INV. EL.
7+80.00	-15.50'	304.52
7+40.00	-18.00'	303.80
7+40.00	-20.50'	303.08
6+83.00	-22.00'	302.70

07-012-00-032  
SPRINGER LLC  
D.R. 20070507-0040923

1-L  
07-012-00-073  
WYNLEIGH HOMEOWNERS ASSOCIATION INC  
D.R. 2889 0313

2-R  
07-012-00-037  
HENRY F. DUPONT  
D.R. H 20-97

ADDENDA / REVISIONS	



## CULVERT REPLACEMENTS ON N239, PYLES FORD RD

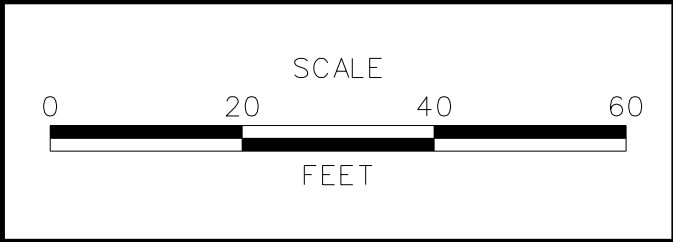
CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

CONSTRUCTION PLAN	
SECTION	BR
SHEET NO.	8

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NOTE: THE BORING DATA PROVIDED ON THE PROFILE SHEETS INDICATES THE SOIL CONDITION ONLY  
AT THE SPECIFIC LOCATION EACH BORING WAS PERFORMED AND ONLY TO THE DEPTH PENETRATED.

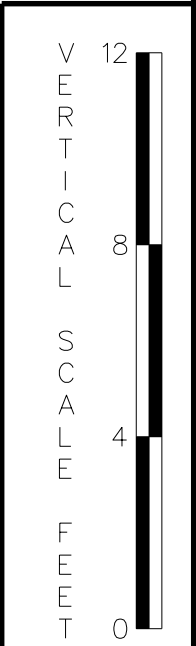
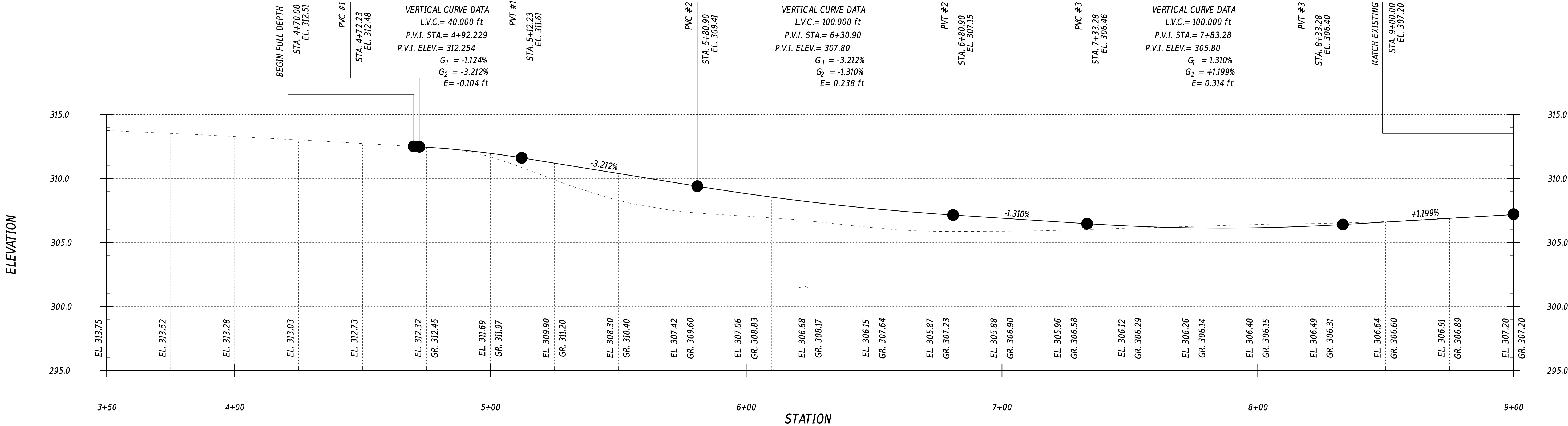
ADDENDA / REVISIONS	



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

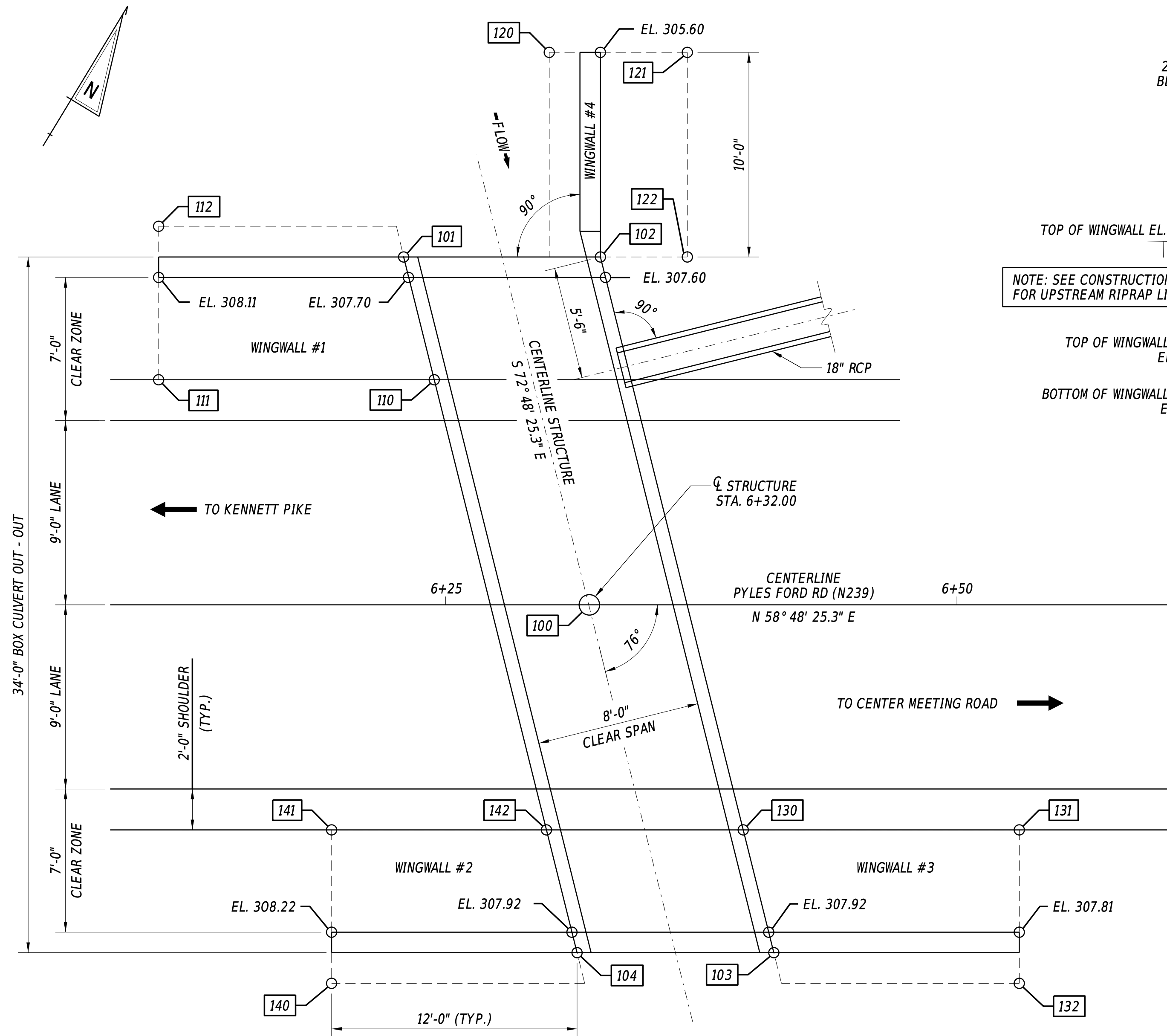
CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

PROFILE	SECTION
	BR
	SHEET NO. 9





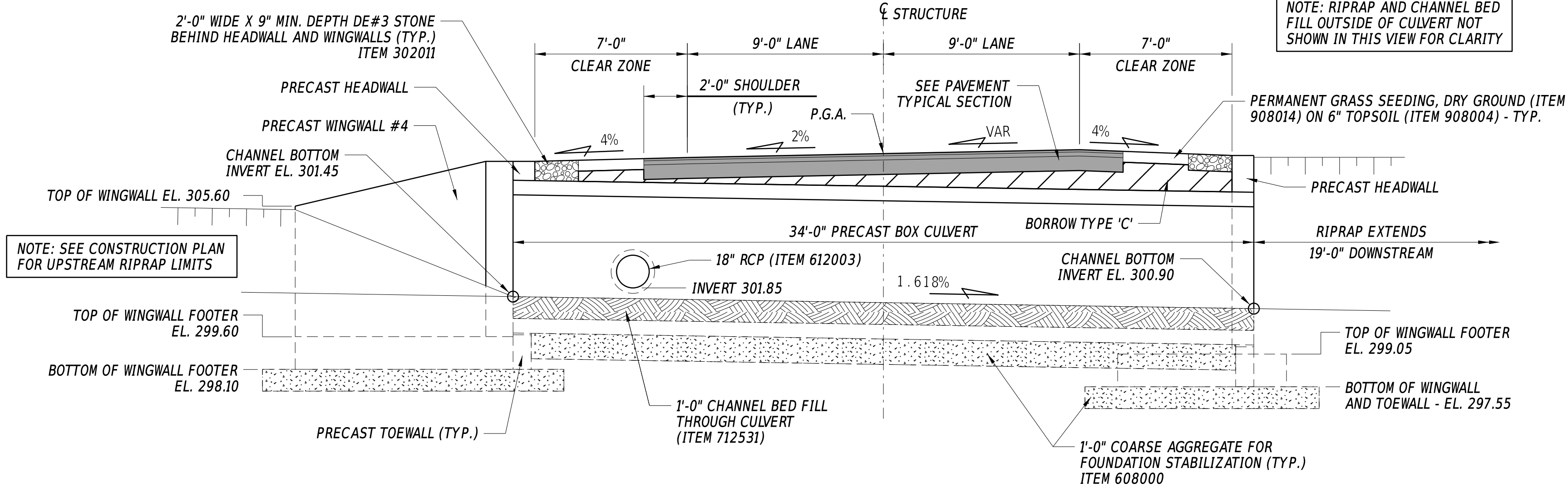




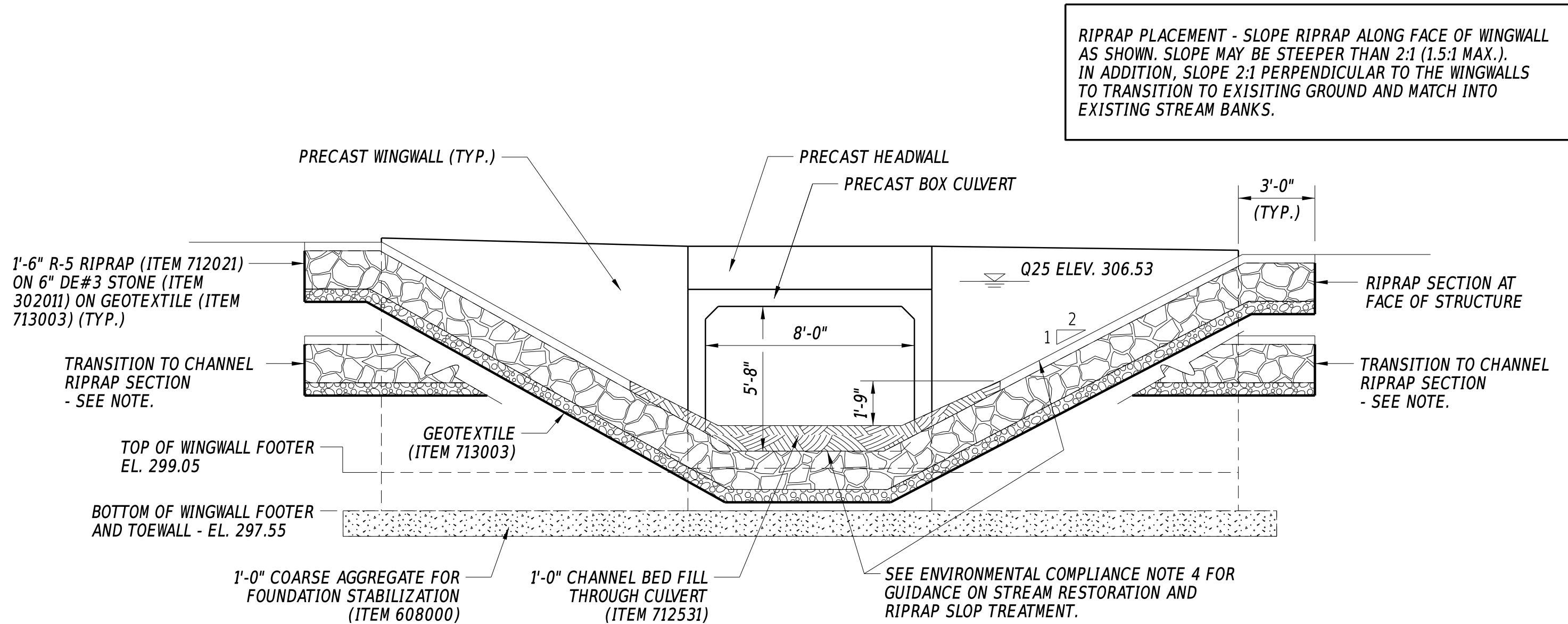
BRIDGE PLAN  
1/4" = 1'-0"

WORKING POINTS					WORKING POINTS				
PT.	STATION	OFFSET	NORTHING	EASTING	PT.	STATION	OFFSET	NORTHING	EASTING
100	6+32.00	0.00	659447.12	601449.52	122	6+36.79	-17.00	659464.14	601444.81
101	6+22.90	-17.00	659456.96	601432.94	130	6+39.46	11.00	659441.57	601461.59
102	6+32.54	-17.00	659461.94	601441.17	131	6+53.02	11.00	659448.60	601473.19
103	6+41.02	17.00	659437.25	601466.03	132	6+53.02	18.50	659442.18	601477.08
104	6+31.40	17.00	659432.27	601457.81	140	6+19.40	18.50	659424.77	601448.32
110	6+24.50	-11.00	659452.65	601437.40	141	6+19.40	11.00	659431.18	601444.43
111	6+10.94	-11.00	659445.62	601425.81	142	6+29.84	11.00	659436.59	601453.36
112	6+10.94	-18.50	659452.04	601421.92	150	6+08.82	-24.16	659455.78	601417.18
120	6+30.04	-27.00	659469.20	601433.85	151	6+18.02	-42.78	659476.47	601415.40
121	6+36.79	-27.00	659472.70	601439.63					

NOTE: POINTS 150 AND 151 REFER TO LIMITS OF RIPRAP PLACEMENT - SEE BRIDGE 1-086 CONSTRUCTION PLAN



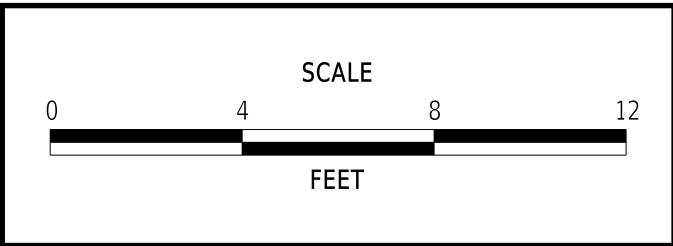
BRIDGE SECTION  
1/4" = 1'-0"



DOWNSTREAM ELEVATION  
1/4" = 1'-0"

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ADDENDA / REVISIONS	

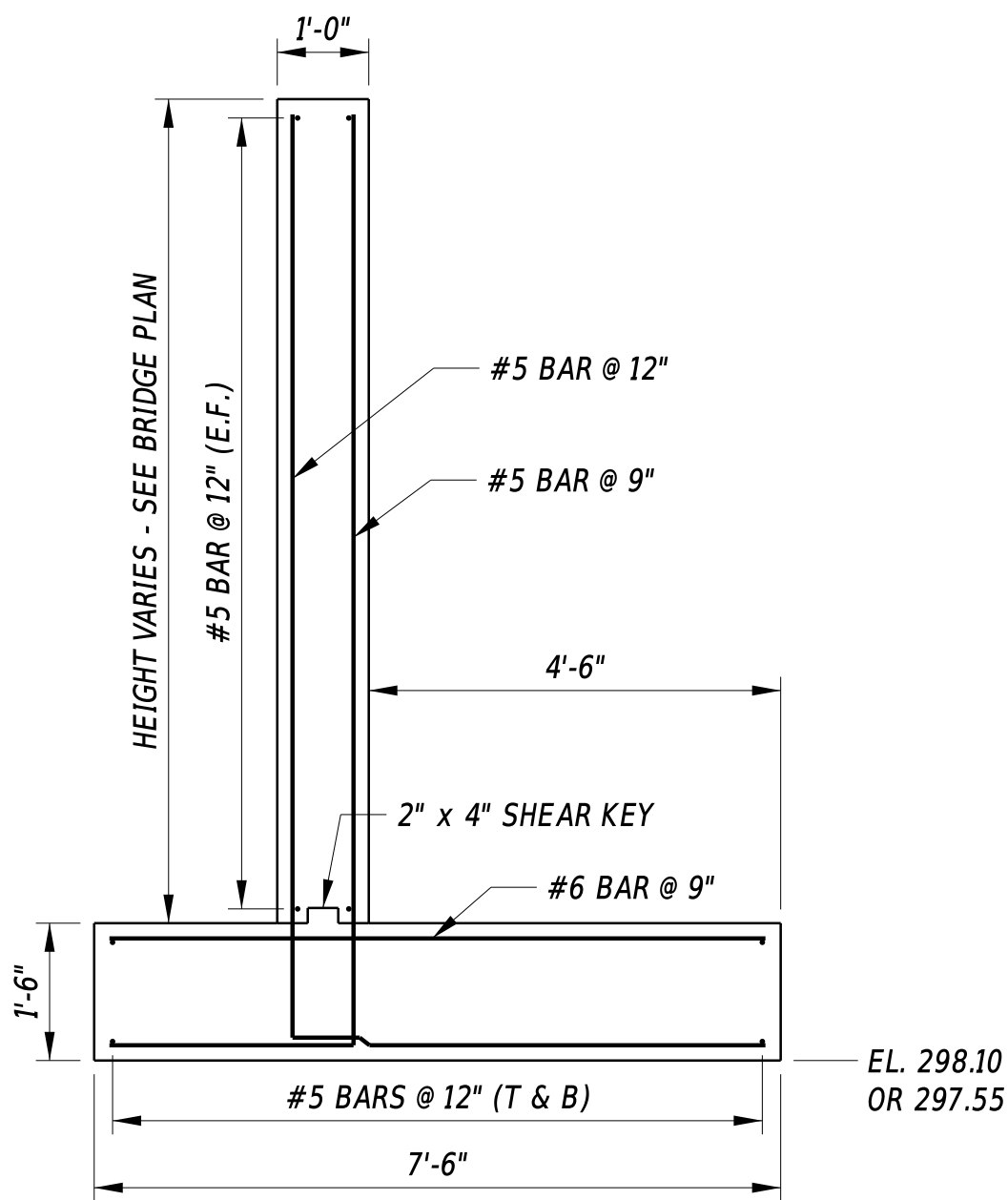


CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

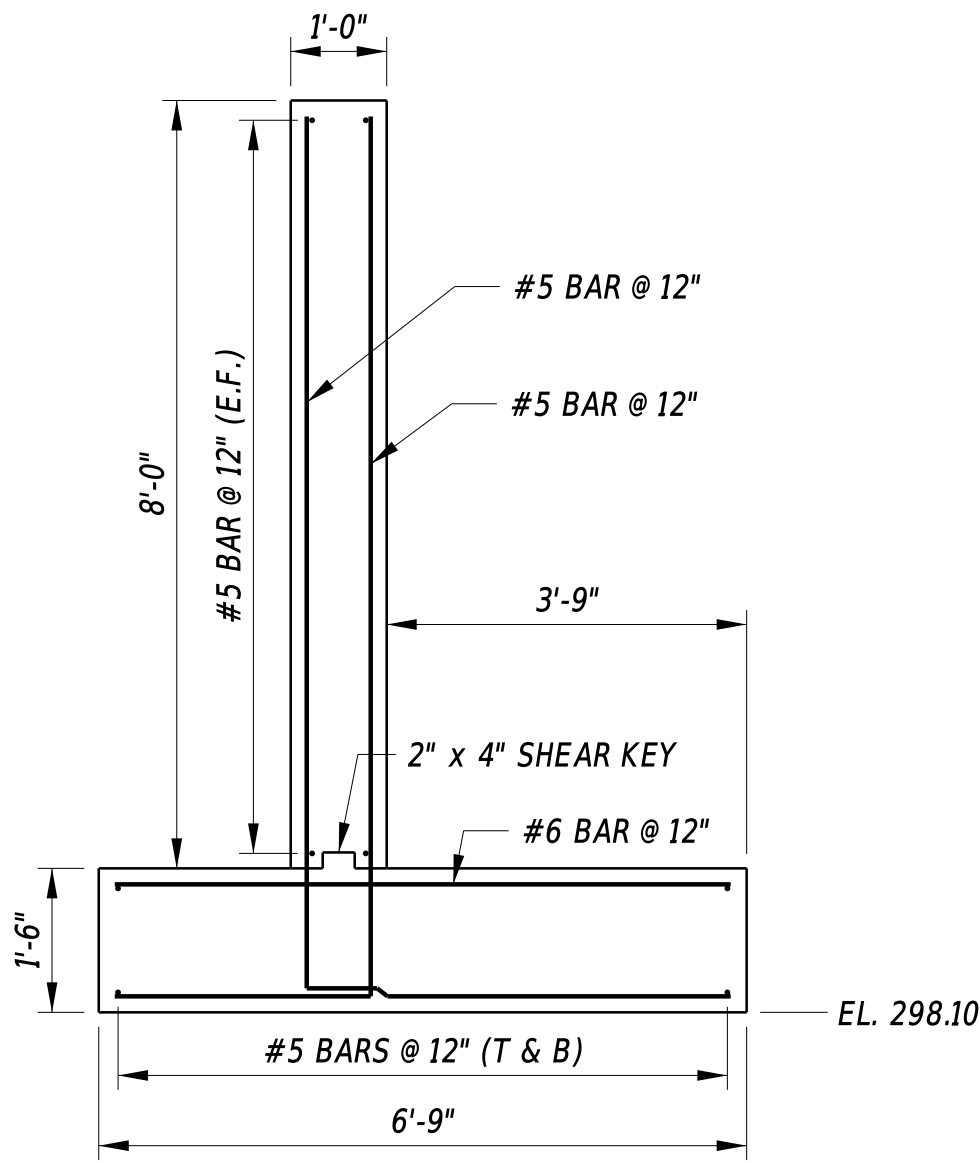
CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

BRIDGE PLAN, SECTION  
AND ELEVATION

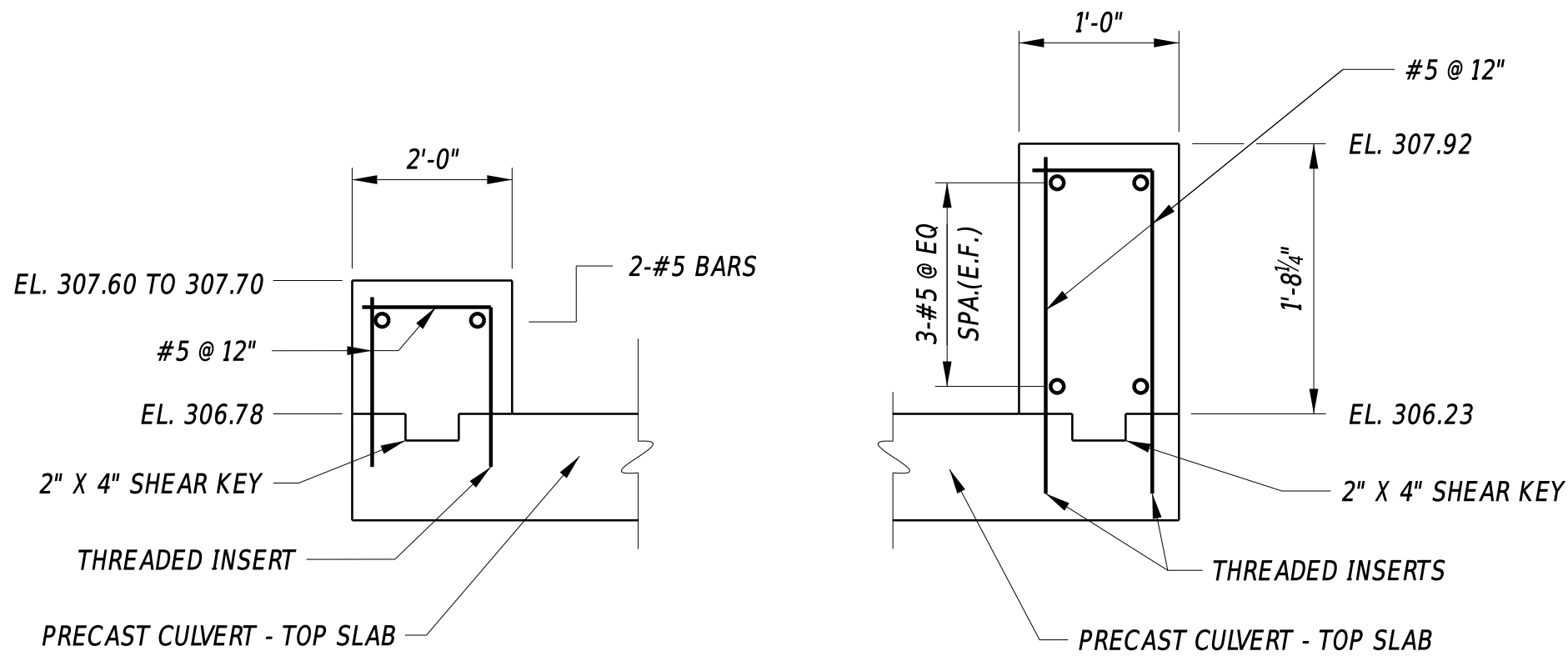
SECTION
BR
SHEET NO.
11



**TYPICAL WINGWALL SECTION**  
(WINGWALLS #1-#3)  
1/2" = 1'-0"



**WINGWALL #4 SECTION**  
1/2" = 1'-0"

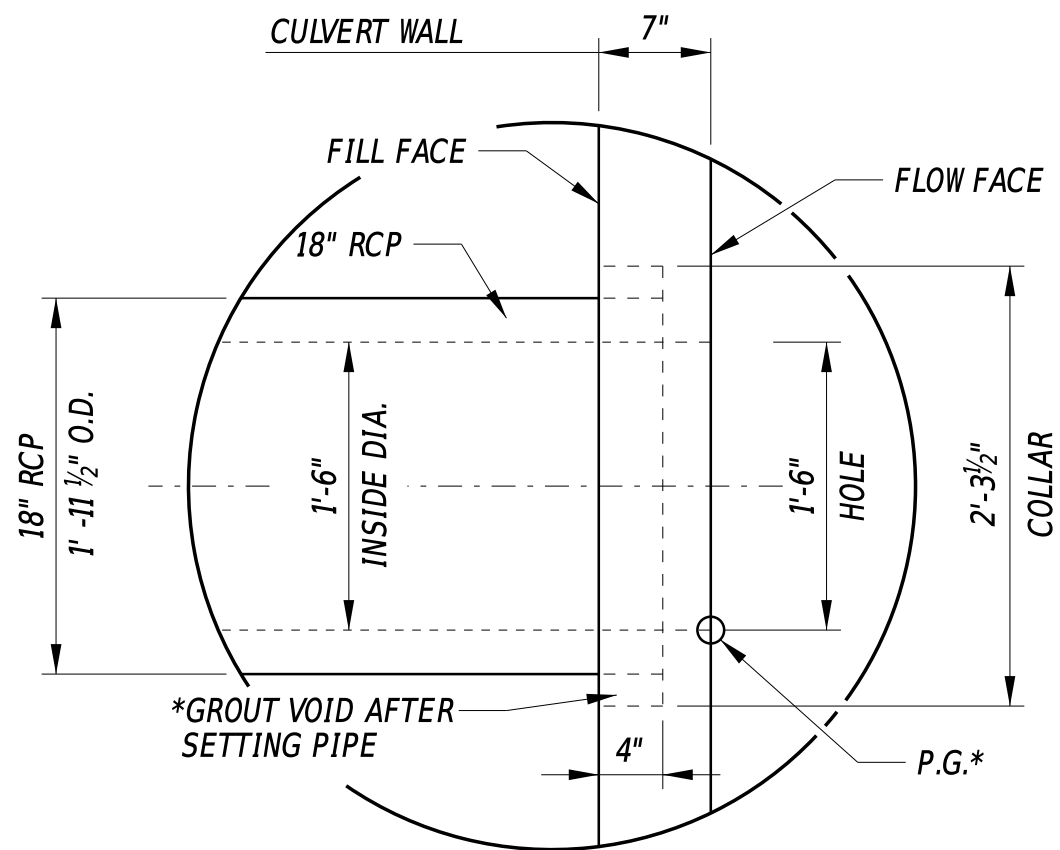


**UPSTREAM**

**DOWNSTREAM**

**HEADWALL DETAILS**

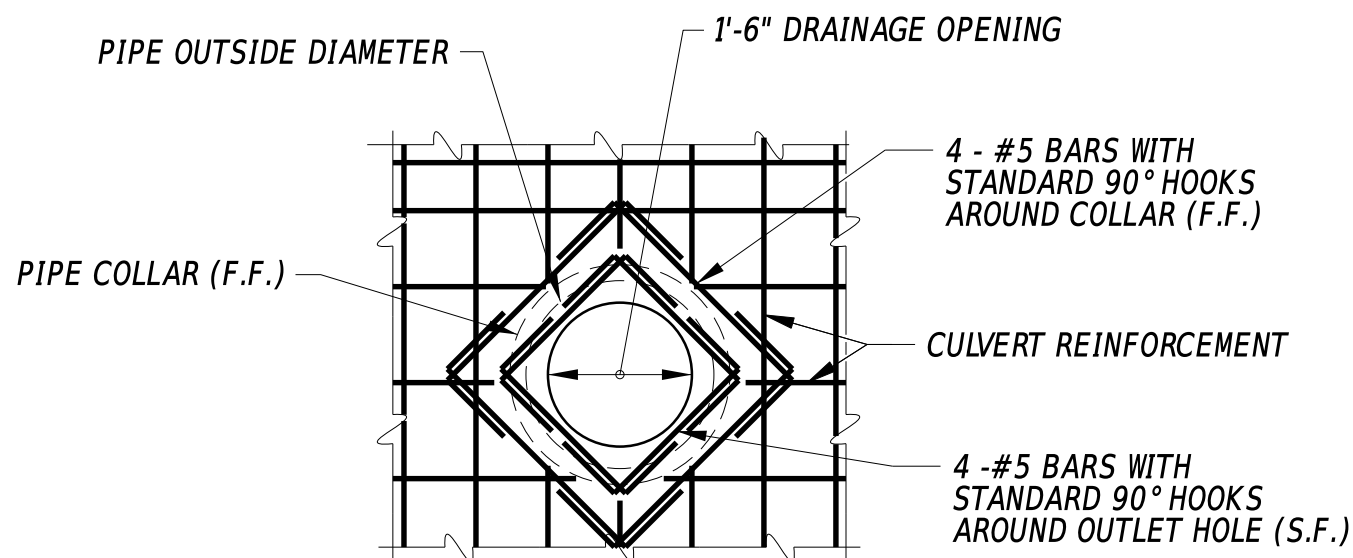
1" = 1'-0"



\*NOTE: USE HIGH STRENGTH NON-SHRINK GROUT,  
PAYMENT INCIDENTAL TO ITEM 602736

**PIPE COLLAR SECTION**

1" = 1'-0"



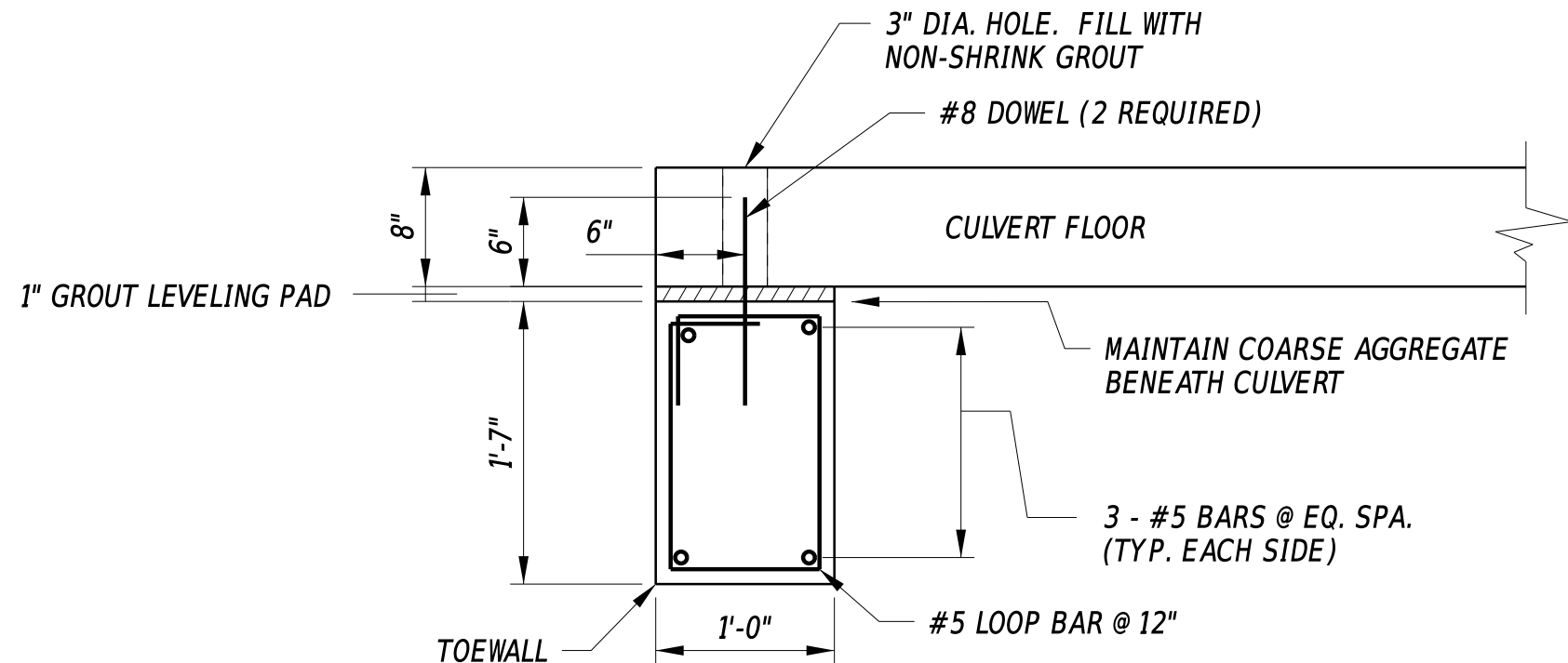
1. ALL VERTICAL AND HORIZONTAL CULVERT REINFORCEMENT SHALL EXTEND TO WITHIN 2" OF PROPOSED DRAINAGE OPENING.
2. REFER TO 'PROPOSED BRIDGE PLAN AND ELEVATION' SHEET FOR ADDITIONAL INFORMATION REGARDING PROPOSED DRAINAGE INLET LOCATIONS AND ELEVATIONS.
3. THE EDGE OF THE OPENING FOR PIPE SHALL HAVE BE A MINIMUM 12" FROM ANY JOINT BETWEEN PRECAST SECTIONS.

**PIPE COLLAR ELEVATION**

1/2" = 1'-0"

**NOTES FOR PRECAST ELEMENTS:**

1. DESIGN PLANS / WORKING DRAWINGS  
INFORMATION PERTAINING TO THE PRECAST REINFORCED CONCRETE BOX CULVERT AND WINGWALL SECTIONS IS INTENDED TO SERVE AS AN INDICATION OF THE TYPE OF CONSTRUCTION ACCEPTABLE FOR USE. THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT FOR APPROVAL A COMPLETE SET OF DETAILED SHOP DRAWINGS FOR THE PRECAST CONCRETE UNITS THEY PROPOSE TO FURNISH. THE SHOP DRAWINGS SHALL INCLUDE:  
A. AN OVERALL PLAN SHOWING ALL UNITS TOGETHER AND DETAILS OF EACH TYPE OF UNIT.  
B. A PLAN VIEW OF REINFORCEMENT FOR ANY IRREGULAR SHAPED (SKEWED, CURVED, ETC.) SECTIONS.  
C. REINFORCING BAR LIST  
D. BILL OF MATERIALS INCLUDING ALL ACCESSORIES  
E. METHOD AND SEQUENCE OF POST-TENSIONING
2. PRECAST ELEMENTS, ACCESSORIES AND INSTALLATION  
PAYMENT FOR ITEM 602736 - PRECAST CONCRETE CULVERT AND ITEM 602738 - PRECAST CONCRETE RETAINING WALL SHALL INCLUDE:  
A. ALL PRECAST ELEMENTS BOX CULVERT, TOEWALLS, AND HEADWALLS UNDER ITEM 602736 AND WINGWALLS UNDER ITEM 602738.  
B. ALL ASSOCIATED REINFORCEMENT.  
C. ALL ACCESSORIES (INCLUDING, BUT NOT LIMITED TO, WEEP HOLES, CONCRETE FINISH, POST-TENSIONING TENDONS, CONNECTION PLATES, GROUT, JOINT WRAP, THREADED INSERTS) MENTIONED IN THE FOLLOWING NOTES UNLESS NOTED OTHERWISE.  
D. DELIVERY AND INSTALLATION OF ALL PRECAST ELEMENTS AND ALL ACCESSORIES.
3. MISCELLANEOUS CONCRETE NOTES  
A. ALL EXPOSED SURFACES SHALL BE PROTECTED WITH A WATER MISCIBLE, PENETRATING SILANE SEALER SUCH AS ENVIROSEAL 20 BY BASF SUPERIOR OR APPROVED EQUAL.  
B. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
4. BOX CULVERT POST-TENSIONING  
THE PRECAST BOX CULVERT SECTIONS SHALL BE POST-TENSIONED TOGETHER WITH A MINIMUM OF FOUR POST-TENSIONING TENDONS. THE CULVERT SHALL BE POST-TENSIONED SUCH THAT THE NEOPRENE GASKETS ARE COMPRESSED ALL AROUND AND THERE IS A 1/2" MAXIMUM GAP BETWEEN SECTIONS. MAXIMUM POST-TENSIONING FORCE SHALL BE 28,900 lbs. POST-TENSIONING DETAILS (PLACEMENT, SEQUENCE OF TENSIONING, etc.) SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS. ALL POCKETS AND DUCTS FOR POST-TENSIONING SHALL BE FILLED WITH NON-SHRINK GROUT.
5. WINGWALL POST TENSIONING  
A. THE PRECAST WINGWALL SECTIONS SHALL BE POST TENSIONED TOGETHER AND POSITIVELY CONNECTED TO THE BOX CULVERT WITH A MINIMUM OF TWO POST-TENSIONING TENDONS. POST-TENSIONING SHALL BE AS PER NOTE 4.  
B. AT LOCATIONS WHERE POST TENSIONING OF THE WINGWALLS IS NOT FEASIBLE, A BOLTED CONNECTION MAY BE USED. BOLTED CONNECTION DETAILS SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS.
6. BOLTED CONNECTIONS  
THE BOLTED CONNECTION MUST CONSIST OF A MINIMUM OF TWO 3'-0" WIDE x 2'-0" TALL x 1/4" THICK PLATES PER JOINT WITH AT LEAST FOUR 3/4" BOLTS PER PLATE. ANGLED PLATES SHALL HAVE 8 BOLTS. SLOTTED HOLES IN THE PLATE SHALL NOT BE PERMITTED. HOLES FOR ANCHOR BOLTS MAY BE FIELD DRILLED.
7. JOINTS BETWEEN PRECAST SECTIONS  
A. NEOPRENE GASKETS SHALL BE PROVIDED AT THE JOINTS BETWEEN ALL PRECAST UNITS IN ORDER TO MAKE THE JOINTS WATERTIGHT. AFTER INSTALLATION, THE GASKETS SHALL BE COMPRESSED SUCH THAT GAPS ARE NOT VISIBLE.  
B. ALL JOINTS BETWEEN PRECAST BOX CULVERT SECTIONS SHALL BE TONGUE AND GROOVE.  
C. ALL WINGWALL TO WINGWALL AND WINGWALL TO BOX CULVERT JOINTS SHALL HAVE A SHEAR KEY.  
D. THE LOCATIONS OF THE JOINTS IN THE BOX CULVERT SHALL BE DETERMINED BY THE PRECASTER AND SUBMITTED IN THE SHOP DRAWINGS FOR APPROVAL.  
E. THE REINFORCEMENT SHALL HAVE 2" COVER AT THE END OF EACH SECTION AND MEET OR EXCEED THE MINIMUM AREA OF STEEL PER FOOT DENOTED IN THE PLANS.  
F. ALL JOINT EXTERIORS SHALL BE COVERED WITH A MINIMUM 9" WIDE WRAP CENTERED ON THE JOINT AS PER THE SPECIAL PROVISION FOR ITS RESPECTIVE ITEM.
8. TOEWALLS  
A. TOEWALLS SHALL BE PLACED BENEATH THE BOTTOM SLAB OF THE CULVERT AT THE INLET AND OUTLET AND CONNECTED BY DOWELS GROUTED INTO THE BOTTOM SLAB AS SHOWN.  
B. THE 1" GROUT LEVELING PAD SHALL BE PLACED IMMEDIATELY PRIOR TO PLACEMENT OF THE CULVERT SECTION.  
C. COARSE AGGREGATE PLACED BENEATH THE CULVERT SHALL BE CONTAINED IN PLACE (BY FORMWORK OR OTHER ACCEPTABLE MEANS) WHILE ADJACENT EXCAVATIONS (i.e. INSTALLATION OF WINGWALLS) ARE COMPLETED. ANY VOIDS BETWEEN THE BOTTOM SLAB OF THE CULVERT AND THE COARSE AGGREGATE SHALL BE FILLED WITH FLOWABLE FILL PRIOR TO ANY BACKFILLING.



**TOEWALL DETAIL**

1" = 1'-0"

ADDENDA / REVISIONS

SCALE AS NOTED

CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT

T200507103

COUNTY

NEW CASTLE

BRIDGE NO.

1-086

DESIGNED BY:

GCL III / SR

CHECKED BY:

NED

STRUCTURAL DETAILS

SECTION

BR

SHEET NO.

12

BORING #B # 1	DATE DRILLED: 03/14/06	
STATION: 6+24	OFFSET: 8.0' L	ELEVATION: 306.20
CASING SIZE: 3 1/4" HOLLOW STEM AUGER		
SAMPLER: SPLIT BARREL		
ENERGY PER BLOW (AVERAGE):		
WEIGHT OF HAMMER (W/H): 140 LB		WEIGHT OF ROD (W/R):
COMMENTS:		

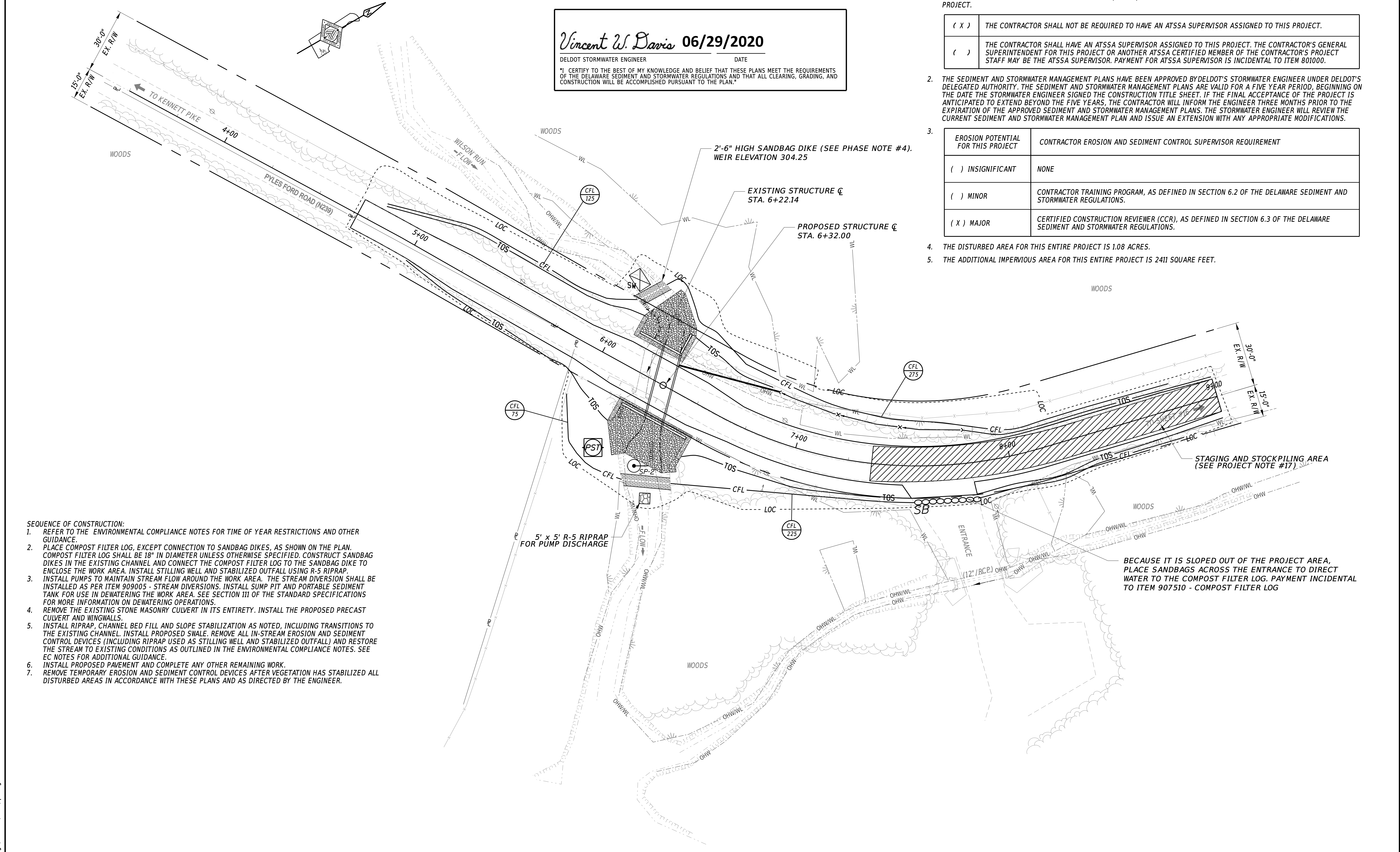
SAMPLE NO.		BLOWS/DEPTH		SAMPLE DESCRIPTION		REMARKS	CLASS
1	1.0'	11	25	Moist dense brown coarse sandy gravel w/some fine sand and silt.			A-1-b (0)
	2.0'						
				9" Recovery			
2	2.0'	10		Moist medium dense brownish gray gravel w/some fine sand and silt, trace of coarse sand.			A-1-a (0)
		11					
		13					
	4.0'	13		16" Recovery			
3	4.0'	15		No Sample Recovery			-----
		10					
		15					
	6.0'	11					
4	6.0'	12		No Sieve Analysis - Indication of moist dense rock fragments.			-----
		14					
		22					
	8.0'	29		2" Recovery			
5	8.0'	10		No Sieve Analysis - Indication of moist very dense rock fragments.		BOTTOM OF STONE WATER DEPTH: 8.2' DEPTH = 9.10' (EL. 297.10)	-----
		15					
		57					
	9.5'			6" Recovery			
6	10.0'	38		No Sieve Analysis - Indication of moist very dense silty rock fragments.			-----
	10.9'	50/5"					
				8" Recovery			
7	12.0'	11		Wet very dense brown silty fine sand and gravel w/some coarse sand.			A-2-4 (0)
	12.9'	50/5"					
				7" Recovery			
8	14.0'	50/5"		No Sieve Analysis - Indication of wet very dense weathered rock fragments.			-----
	14.4'						
				3" Recovery			
9	16.0'	15		Wet very dense brown coarse to fine sandy gravel w/some silt.			A-1-b (0)
	16.8'	50/4"					
				6" Recovery			
10	18.0'	50		Wet very dense brown silty fine to coarse sand w/some gravel.			A-2-4 (0)
	18.5'						
				4" Recovery			
11	24.0'	60		Wet very dense brown silty fine sand and gravel w/some coarse sand.			A-2-4 (0)
	24.5'						
				5" Recovery			
Run # 1	28.5'	Core Drilling		Rock ( Weathered Fractured Gneiss )		ROD = Rock Quality Designation	-----
	33.5'			55" Recovery = 91.7% ROD = 50.0% (fair)			
		( END )					

BORING #B # 2	DATE DRILLED: 03/13/06	
STATION: 6+19	OFFSET: 4.9' R	ELEVATION: 306.71
CASING SIZE: 3 1/4" HOLLOW STEM AUGER		
SAMPLER: SPLIT-BARREL		
ENERGY PER BLOW (AVERAGE):		
WEIGHT OF HAMMER (W/H): 140 LB		WEIGHT OF ROD (W/R):
COMMENTS:		

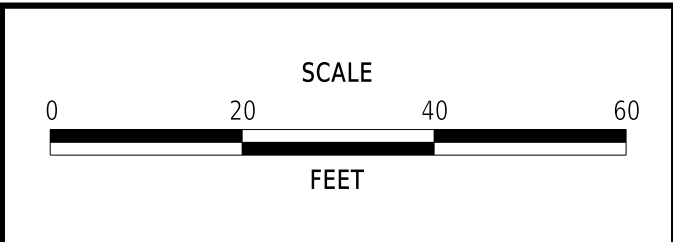
SAMPLE NO.		BLOWS/DEPTH		SAMPLE DESCRIPTION		REMARKS	CLASS
1	1.0'	10	19	Moist dense brown fine sandy gravel and silt w/some coarse sand.			A-2-4 (0)
	2.0'						
				10" Recovery			
2	2.0'	10		Moist medium dense brown silty fine sandy gravel w/some coarse sand.			A-1-b (0)
		9					
		8					
	4.0'	8		12" Recovery			
3	4.0'	8		Wet medium dense brown fine sandy gravel and silt w/some coarse sand.			A-2-4 (0)
		9					
		9					
	6.0'	13		18" Recovery			
4	6.0'	10		Wet medium dense brown silty coarse to fine sand w/some gravel.			A-2-4 (0)
		11					
		11					
	8.0'	12		17" Recovery			
5	8.0'	6		Wet dense brown fine sandy gravel w/some silt and coarse sand.			A-1-b (0)
		13					
		35					
	10.0'	42		18" Recovery			
6	10.0'	46		Wet very dense brown fine sandy gravel w/some silt and coarse sand.		BOTTOM OF STONE DEPTH = 10.16' (EL. 296.55)	A-1-b (0)
	10.8'	50/4"					
				8" Recovery			
7	12.0'	32		Wet very dense brown silty fine to coarse sandy gravel.		WATER DEPTH: 12.3'	A-1-b (0)
	12.8'	50/4"					
				8" Recovery			
8	14.0'	3		Wet very dense brown fine sandy gravel w/some silt and coarse sand.			A-1-b (0)
		12					
		39					
	16.0'	26		17" Recovery			
9	16.0'	50		Wet very dense brown silty fine sand and gravel w/some coarse sand.			A-2-4 (0)
	16.8'	50/4"					
				7" Recovery			
10	19.0'	20		Wet dense brown silty fine sand and gravel w/some coarse sand.			A-2-4 (0)
		16					
	20.5'	30		12" Recovery			
11	24.0'	50/4"		No Sieve Analysis - Indication of wet very dense brown silty rock fragments.			-----
	24.4'						
				4" Recovery			
Run # 1	28.5'	Core Drilling		Rock - ( Gneiss )		ROD = Rock Quality Designation	-----
	33.5'			55" Recovery = 91.7% ROD = 70.0% (fair)			
		( END )					



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ADDENDA / REVISIONS	



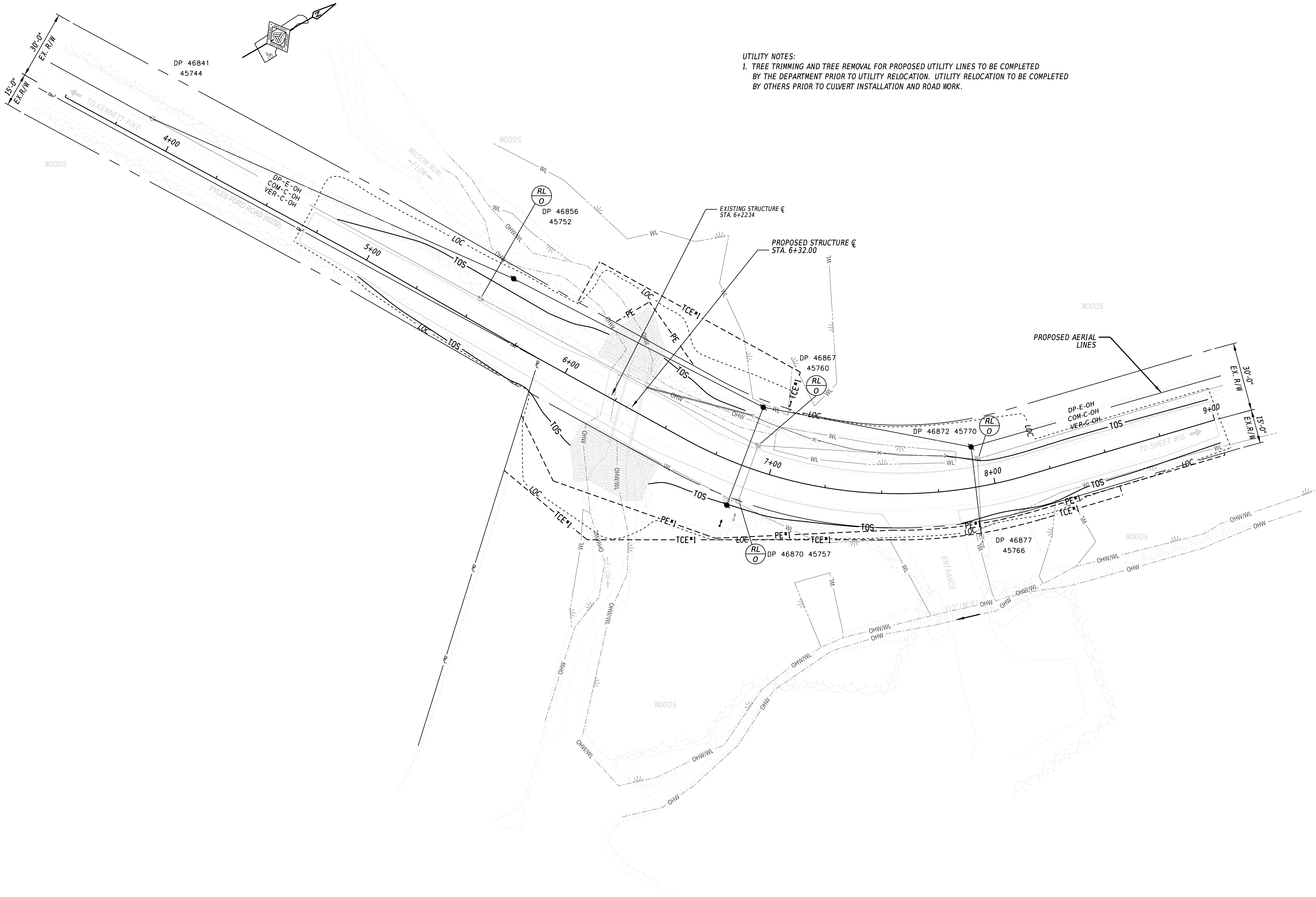
**CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD**

CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

CONSTRUCTION PHASING AND EROSION CONTROL PLAN	

SECTION
BR
SHEET NO.
14

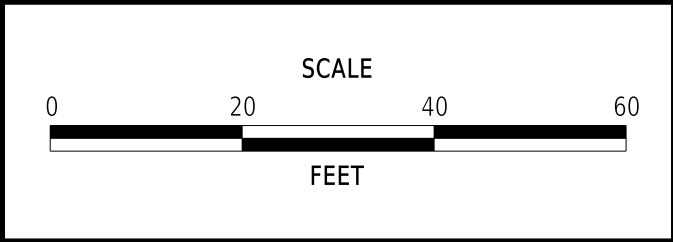




UTILITY NOTES:  
1. TREE TRIMMING AND TREE REMOVAL FOR PROPOSED UTILITY LINES TO BE COMPLETED BY THE DEPARTMENT PRIOR TO UTILITY RELOCATION. UTILITY RELOCATION TO BE COMPLETED BY OTHERS PRIOR TO CULVERT INSTALLATION AND ROAD WORK.

26-JUN-2020  
11:10  
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ADDENDA / REVISIONS	

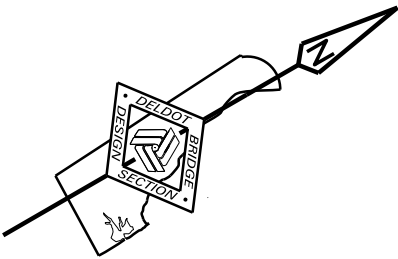


**CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD**

CONTRACT	BRIDGE NO.	<b>1-086</b>
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

UTILITY RELOCATION PLAN	
SECTION	BR
SHEET NO.	15

DATUM REFERENCE:  
HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83 / 2011 / EPOCH 2010.00).  
VERTICAL - THIS PROJECT IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88 BASED ON MODELED GEOID 12A).



HORIZONTAL CURVE DATA

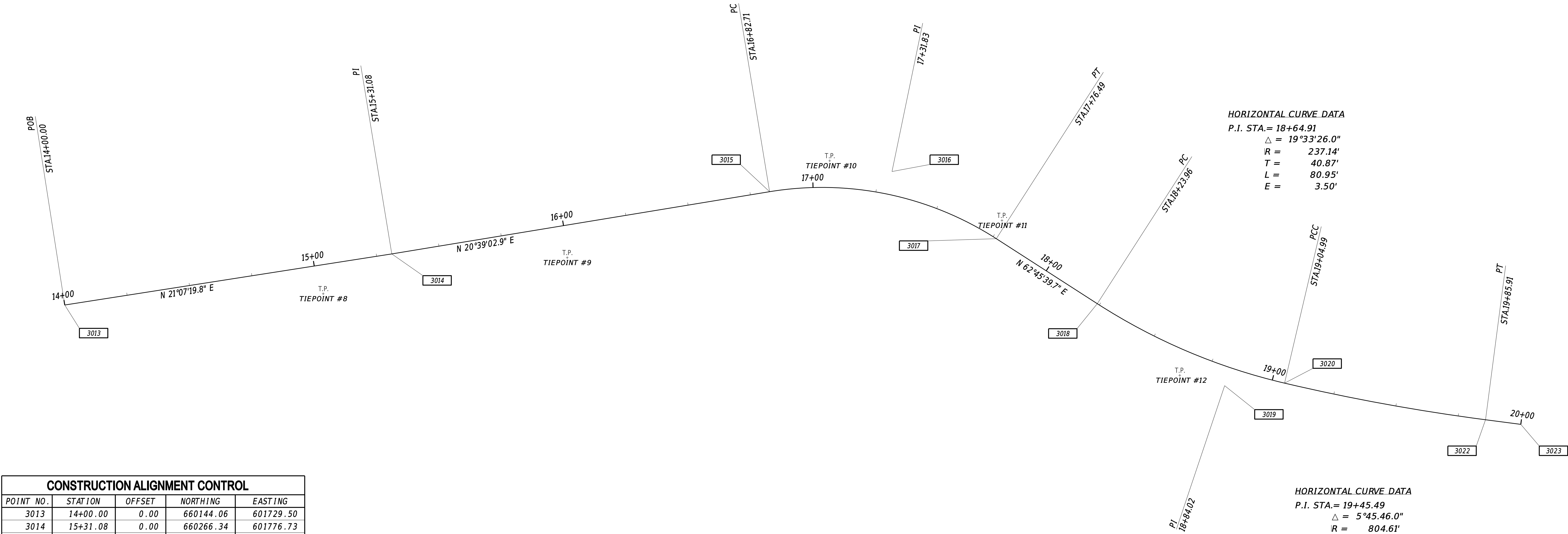
P.I. STA.= 17+31.83  
Δ = 42°06'36.7"  
R = 127.60'  
T = 49.125'  
L = 93.79'  
E = 9.13'

HORIZONTAL CURVE DATA

P.I. STA.= 18+64.91  
Δ = 19°33'26.0"  
R = 237.14'  
T = 40.87'  
L = 80.95'  
E = 3.50'

HORIZONTAL CURVE DATA

P.I. STA.= 19+45.49  
Δ = 5°45.46.0"  
R = 804.61'  
T = 40.50'  
L = 80.93'  
E = 1.02'



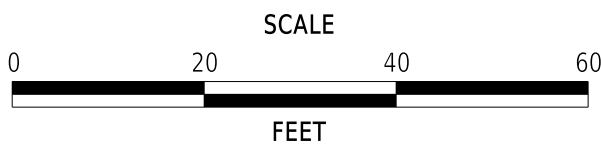
CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
3013	14+00.00	0.00	660144.06	601729.50
3014	15+31.08	0.00	660266.34	601776.73
3015	16+82.71	0.00	660408.22	601830.21
3016	17+31.83	-9.13	660454.18	601847.53
3017	17+76.49	0.00	660476.67	601891.21
3018	18+24.04	0.00	660498.43	601833.49
3019	18+84.02	7.47	660525.88	601986.81
3020	19+04.99	0.00	660546.93	601997.80
3022	19+85.91	0.00	660608.60	602050.15
3023	20+00.00	0.00	660619.79	602058.71

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEV.
8	15+07.19	11.39	660239.94	601778.75	317.65
9	16+04.76	12.79	660330.76	601814.69	319.35
10	17+11.12	-11.61	660439.94	601833.45	324.47
11	17+78.47	-10.84	660487.21	601888.01	327.78
12	18+69.77	7.14	660517.54	601976.31	332.97

ADDENDA / REVISIONS



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

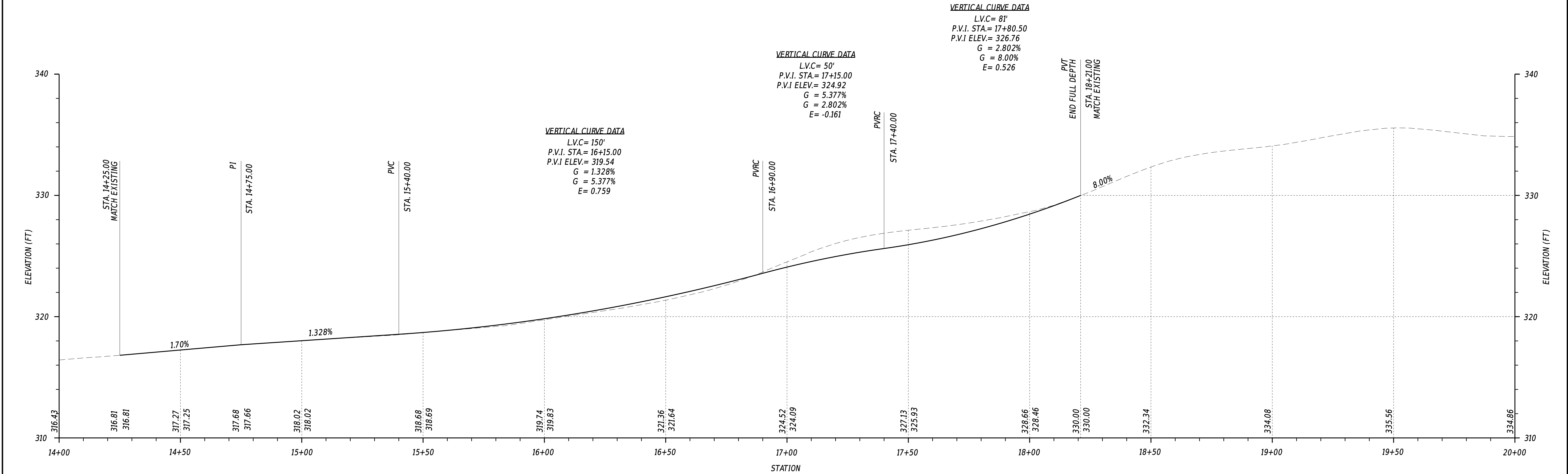
CONTRACT	BRIDGE NO.	1-085
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

HORIZONTAL AND  
VERTICAL CONTROL

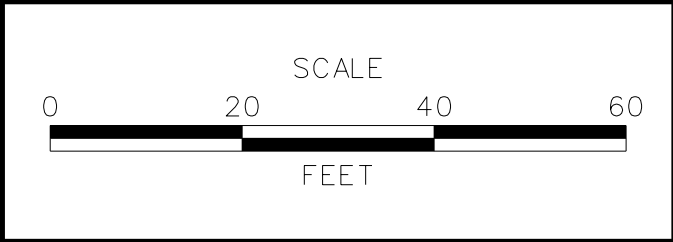
SECTION
BR
SHEET NO.
16



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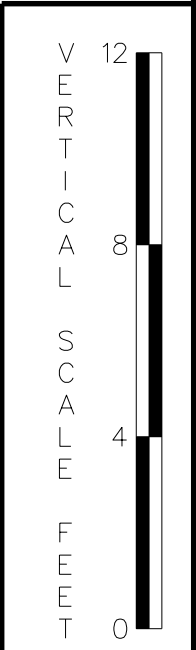
ADDENDA / REVISIONS	

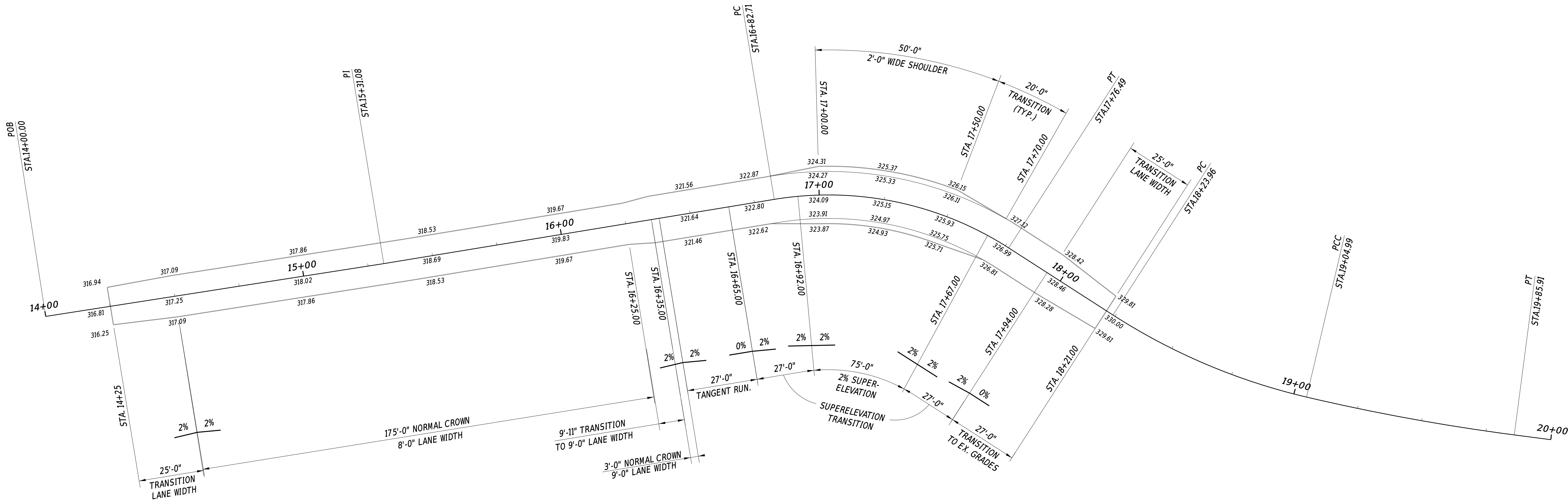
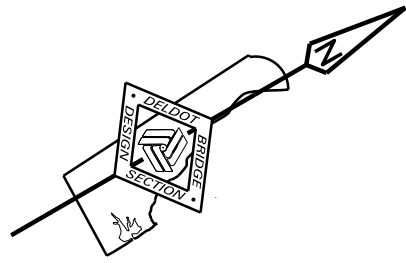


**CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD**

CONTRACT	BRIDGE NO.	1-085
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

PROFILE	SECTION
	BR
	SHEET NO.
	18





ADDENDA / REVISIONS

SCALE



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT

T200507103

COUNTY

NEW CASTLE

BRIDGE NO.

1-085

DESIGNED BY: GCL III / SR

CHECKED BY: NED

GRADES AND  
GEOMETRICS

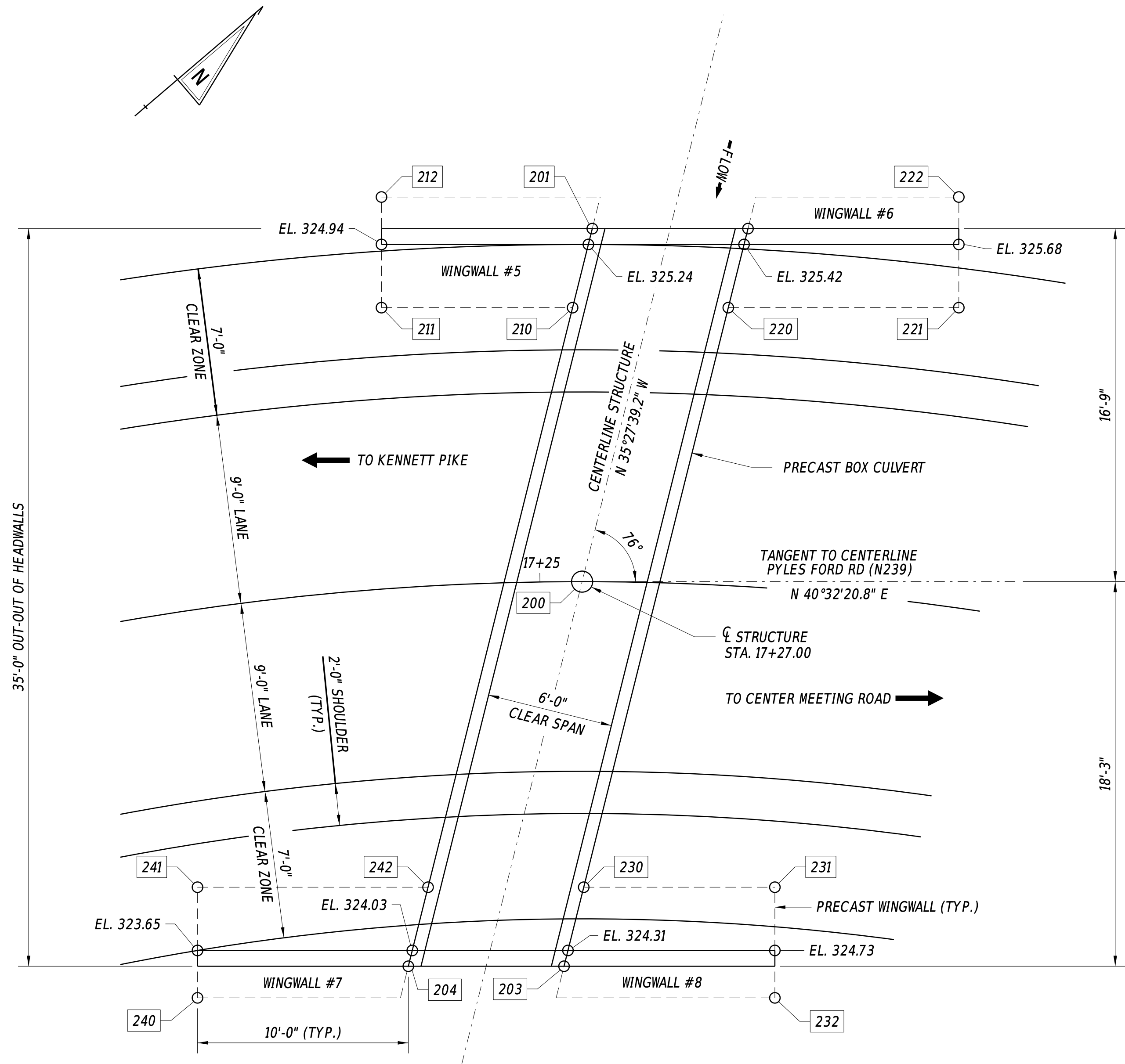
SECTION

BR

SHEET NO.

19

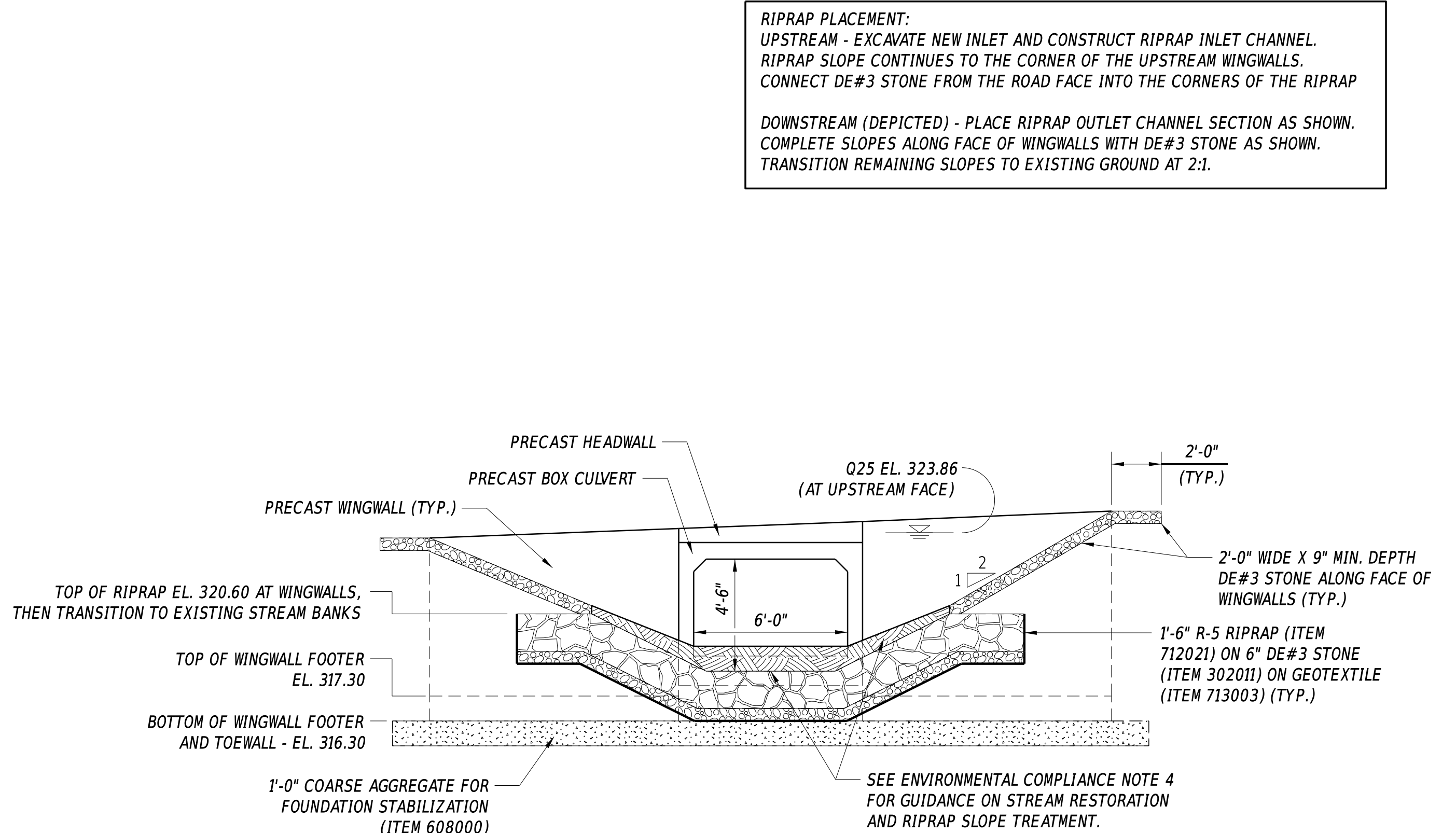




BRIDGE PLAN

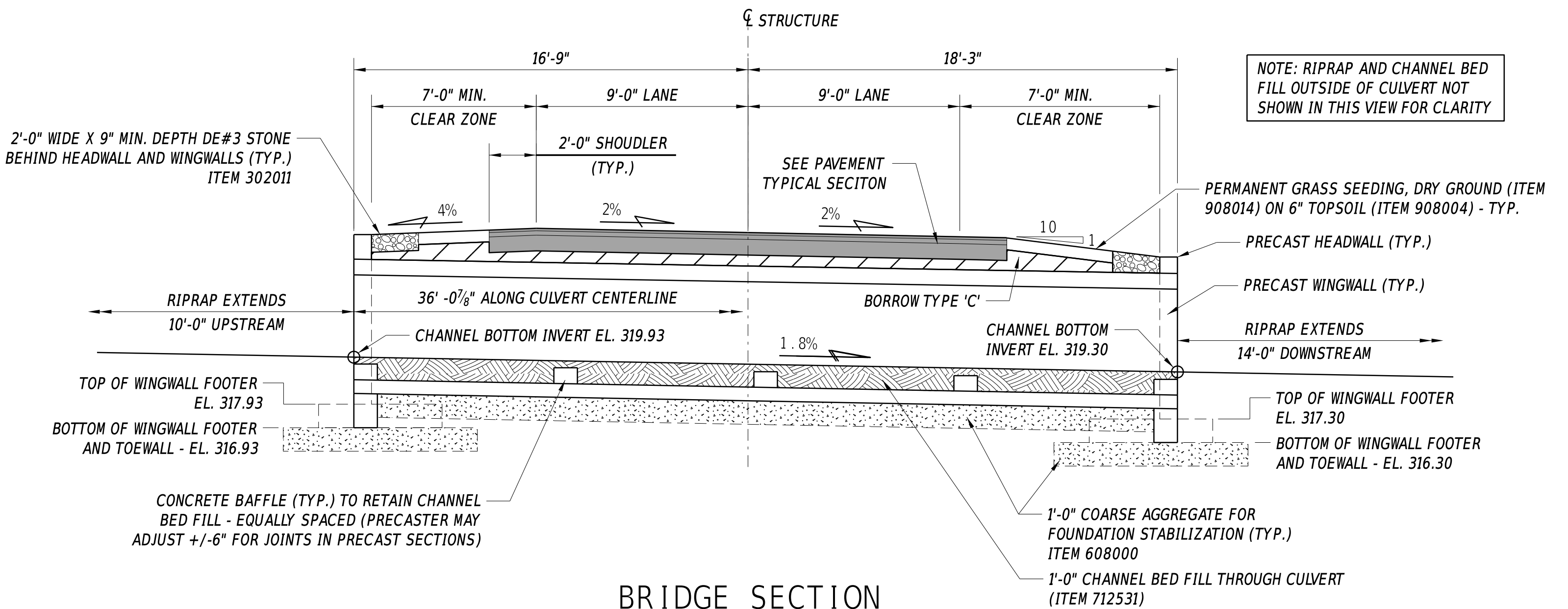
1/4" = 1'-0"

WORKING POINTS					WORKING POINTS				
PT.	STATION	OFFSET	NORTHING	EASTING	PT.	STATION	OFFSET	NORTHING	EASTING
200	17+27.00	0.00	660446.15	601852.64	221	17+43.13	-14.13	660468.18	601854.37
201	17+27.35	-16.75	660457.41	601840.22	222	17+42.47	-19.34	660471.59	601850.38
202	17+33.87	-16.96	660463.02	601845.02	230	17+27.01	14.50	660436.79	601863.17
203	17+25.92	18.25	660433.64	601865.95	231	17+37.21	14.13	660443.68	601869.60
204	17+17.32	17.94	660428.03	601861.15	232	17+37.71	19.36	660440.26	601873.59
210	17+26.59	-13.00	660454.26	601842.47	240	17+05.54	18.22	660419.45	601855.79
211	17+18.38	-13.32	660447.37	601836.57	241	17+06.51	13.04	660422.86	601851.80
212	17+18.60	-18.56	660450.78	601832.58	242	17+18.68	14.26	660431.18	601858.91
220	17+33.29	-13.17	660459.87	601847.27					



DOWNSTREAM ELEVATION

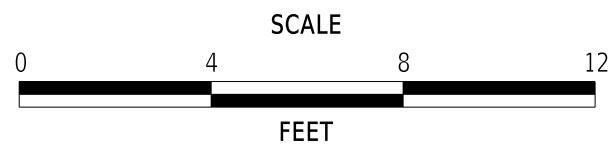
1/4" = 1'-0"



BRIDGE SECTION

1/4" = 1'-0"

ADDENDA / REVISIONS

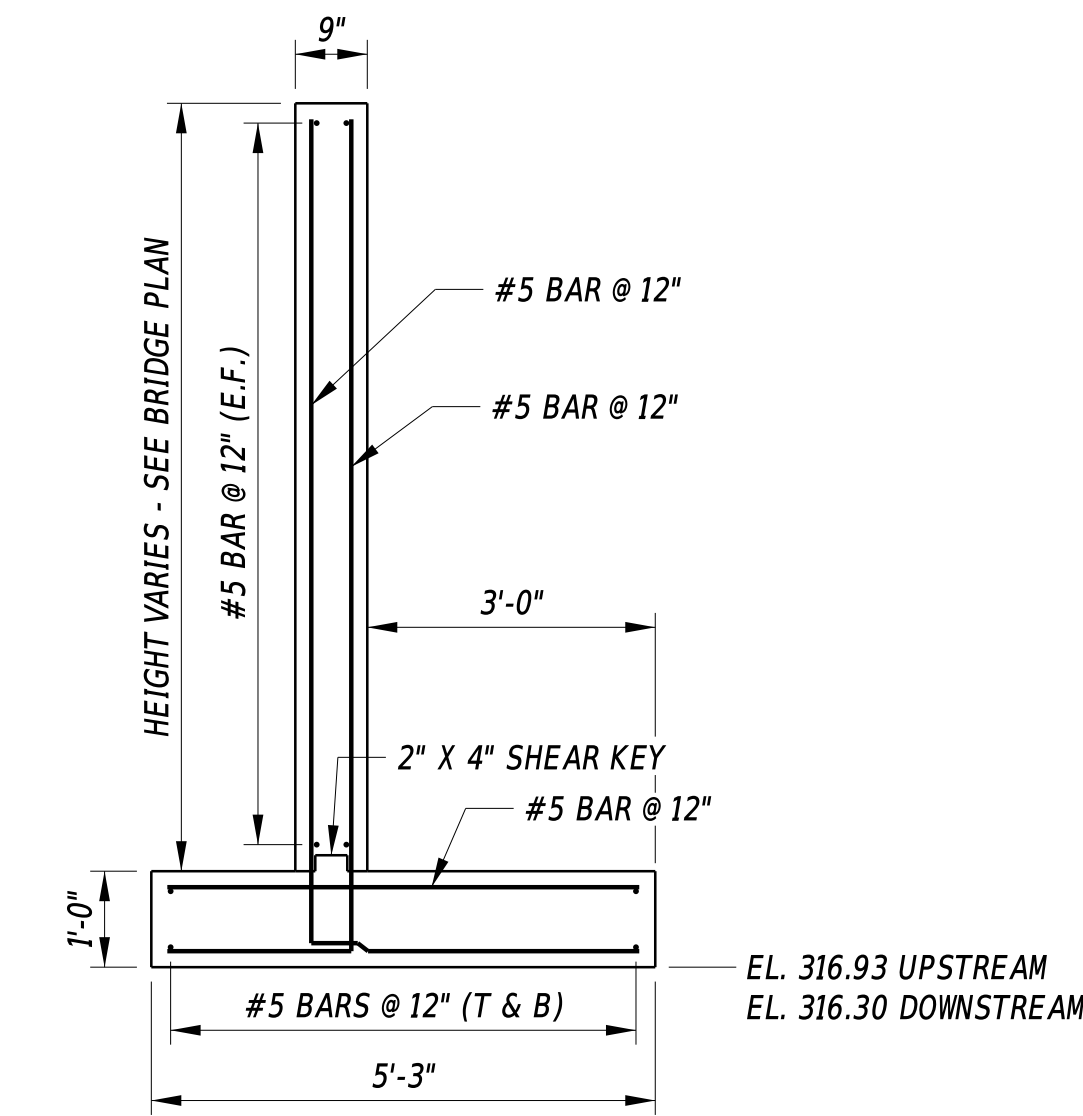


CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-085
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

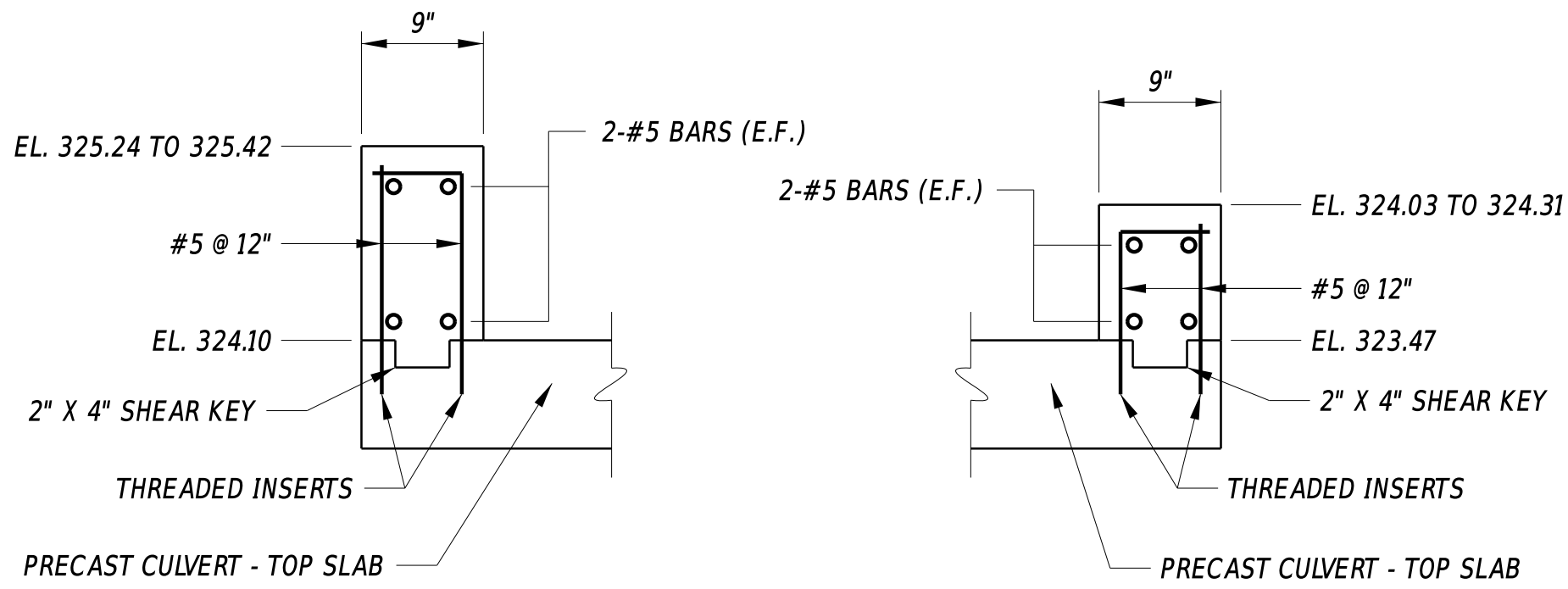
BRIDGE PLAN, SECTION  
AND ELEVATION

SECTION
BR
SHEET NO.
20



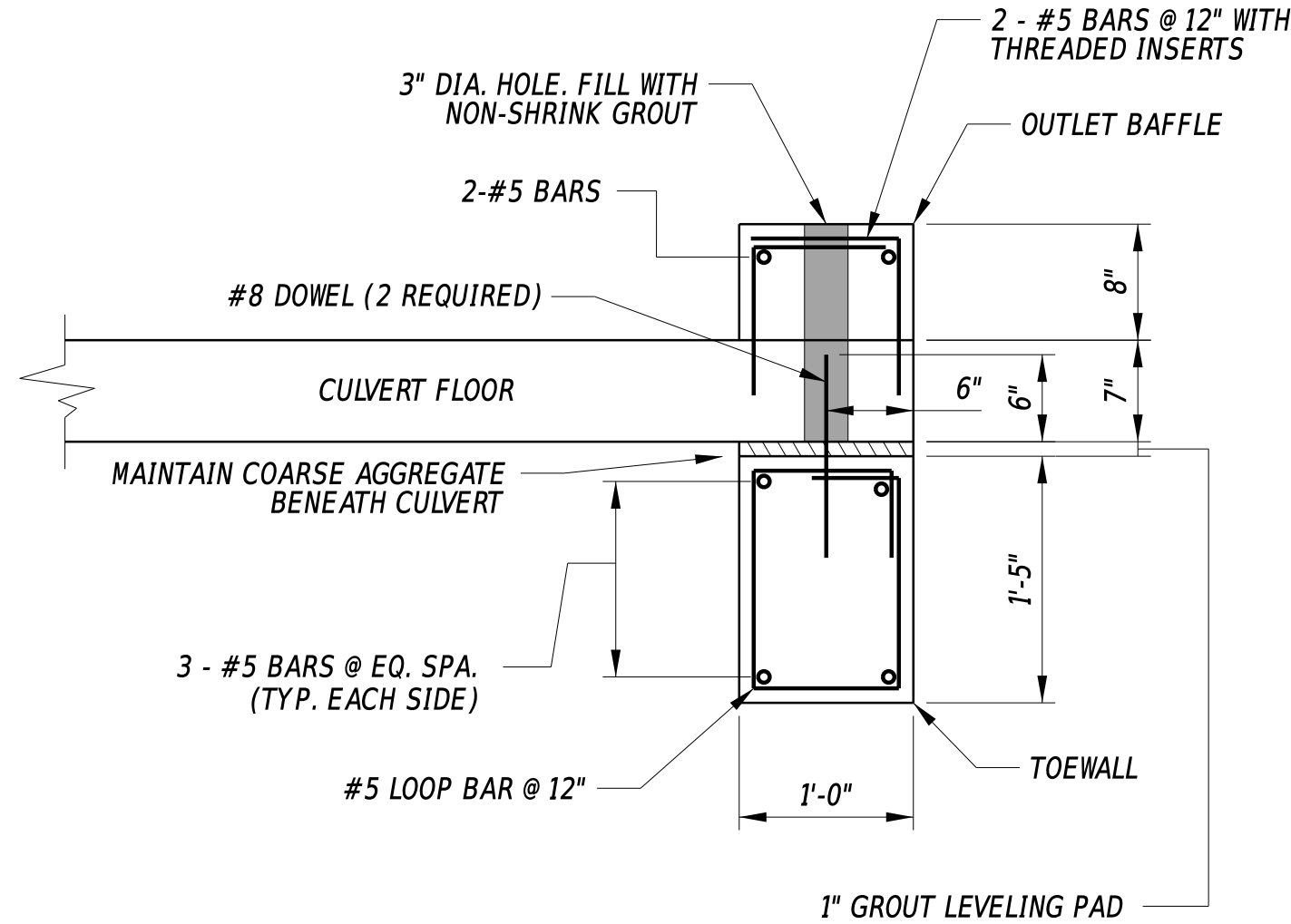
TYPICAL WINGWALL SECTION

1/2" = 1'-0"



HEADWALL DETAILS

1" = 1'-0"



TOEWALL DETAILS

1" = 1'-0"

NOTES FOR PRECAST ELEMENTS:

- DESIGN PLANS / WORKING DRAWINGS  
INFORMATION PERTAINING TO THE PRECAST REINFORCED CONCRETE BOX CULVERT AND WINGWALL SECTIONS IS INTENDED TO SERVE AS AN INDICATION OF THE TYPE OF CONSTRUCTION ACCEPTABLE FOR USE. THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT FOR APPROVAL A COMPLETE SET OF DETAILED SHOP DRAWINGS FOR THE PRECAST CONCRETE UNITS THEY PROPOSE TO FURNISH. THE SHOP DRAWINGS SHALL INCLUDE:  
A. AN OVERALL PLAN SHOWING ALL UNITS TOGETHER AND DETAILS OF EACH TYPE OF UNIT.  
B. A PLAN VIEW OF REINFORCEMENT FOR ANY IRREGULAR SHAPED (SKEWED, CURVED, ETC.) SECTIONS.  
C. REINFORCING BAR LIST  
D. BILL OF MATERIALS INCLUDING ALL ACCESSORIES  
E. METHOD AND SEQUENCE OF POST-TENSIONING
- PRECAST ELEMENTS, ACCESSORIES AND INSTALLATION  
PAYMENT FOR ITEM 602736 - PRECAST CONCRETE CULVERT AND ITEM 602738 - PRECAST CONCRETE RETAINING WALL SHALL INCLUDE:  
A. ALL PRECAST ELEMENTS BOX CULVERT, BAFFLES, TOEWALLS, AND HEADWALLS UNDER ITEM 602736 AND WINGWALLS UNDER ITEM 602738.  
B. ALL ASSOCIATED REINFORCEMENT.  
C. ALL ACCESSORIES (INCLUDING, BUT NOT LIMITED TO, WEEP HOLES, CONCRETE FINISH, POST-TENSIONING TENDONS, CONNECTION PLATES, GROUT, JOINT WRAP, THREADED INSERTS) MENTIONED IN THE FOLLOWING NOTES UNLESS NOTED OTHERWISE.  
D. DELIVERY AND INSTALLATION OF ALL PRECAST ELEMENTS AND ALL ACCESSORIES.
- MISCELLANEOUS CONCRETE NOTES  
A. ALL EXPOSED SURFACES SHALL BE PROTECTED WITH A WATER MISCIBLE, PENETRATING SILANE SEALER SUCH AS ENVIROSEAL 20 BY BASF SUPERIOR OR APPROVED EQUAL.  
B. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
- BOX CULVERT POST-TENSIONING  
THE PRECAST BOX CULVERT SECTIONS SHALL BE POST-TENSIONED TOGETHER WITH A MINIMUM OF FOUR POST-TENSIONING TENDONS. THE CULVERT SHALL BE POST-TENSIONED SUCH THAT THE NEOPRENE GASKETS ARE COMPRESSED ALL AROUND AND THERE IS A 1/2" MAXIMUM GAP BETWEEN SECTIONS. MAXIMUM POST-TENSIONING FORCE SHALL BE 28,900 lbs. POST-TENSIONING DETAILS (PLACEMENT, SEQUENCE OF TENSIONING, etc.) SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS. ALL POCKETS AND DUCTS FOR POST-TENSIONING SHALL BE FILLED WITH NON-SHRINK GROUT.
- WINGWALL POST TENSIONING  
A. THE PRECAST WINGWALL SECTIONS SHALL BE POST TENSIONED TOGETHER AND POSITIVELY CONNECTED TO THE BOX CULVERT WITH A MINIMUM OF TWO POST-TENSIONING TENDONS. POST-TENSIONING SHALL BE AS PER NOTE 4.  
B. AT LOCATIONS WHERE POST TENSIONING OF THE WINGWALLS IS NOT FEASIBLE, A BOLTED CONNECTION MAY BE USED. BOLTED CONNECTION DETAILS SHALL BE SHOWN IN THE SUBMITTED SHOP DRAWINGS.
- BOLTED CONNECTIONS  
THE BOLTED CONNECTION MUST CONSIST OF A MINIMUM OF TWO 3'-0" WIDE x 2'-0" TALL x 1/4" THICK PLATES PER JOINT WITH AT LEAST FOUR 3/4" BOLTS PER PLATE. ANGLED PLATES SHALL HAVE 8 BOLTS. SLOTTED HOLES IN THE PLATE SHALL NOT BE PERMITTED. HOLES FOR ANCHOR BOLTS MAY BE FIELD DRILLED.
- JOINTS BETWEEN PRECAST SECTIONS  
A. NEOPRENE GASKETS SHALL BE PROVIDED AT THE JOINTS BETWEEN ALL PRECAST UNITS IN ORDER TO MAKE THE JOINTS WATERTIGHT. AFTER INSTALLATION, THE GASKETS SHALL BE COMPRESSED SUCH THAT GAPS ARE NOT VISIBLE.  
B. ALL JOINTS BETWEEN PRECAST BOX CULVERT SECTIONS SHALL BE TONGUE AND GROOVE.  
C. ALL WINGWALL TO WINGWALL AND WINGWALL TO BOX CULVERT JOINTS SHALL HAVE A SHEAR KEY.  
D. THE LOCATIONS OF THE JOINTS IN THE BOX CULVERT SHALL BE DETERMINED BY THE PRECASTER AND SUBMITTED IN THE SHOP DRAWINGS FOR APPROVAL.  
E. THE REINFORCEMENT SHALL HAVE 2" COVER AT THE END OF EACH SECTION AND MEET OR EXCEED THE MINIMUM AREA OF STEEL PER FOOT DENOTED IN THE PLANS.  
F. ALL JOINT EXTERIORS SHALL BE COVERED WITH A MINIMUM 9" WIDE WRAP CENTERED ON THE JOINT AS PER THE SPECIAL PROVISION FOR ITS RESPECTIVE ITEM.
- TOEWALLS  
A. TOEWALLS SHALL BE PLACED BENEATH THE BOTTOM SLAB OF THE CULVERT AT THE INLET AND OUTLET AND CONNECTED BY DOWELS GROUTED INTO THE BOTTOM SLAB AS SHOWN.  
B. THE 1" GROUT LEVELING PAD SHALL BE PLACED IMMEDIATELY PRIOR TO PLACEMENT OF THE CULVERT SECTION.  
C. COARSE AGGREGATE PLACED BENEATH THE CULVERT SHALL BE CONTAINED IN PLACE (BY FORMWORK OR OTHER ACCEPTABLE MEANS) WHILE ADJACENT EXCAVATIONS (i.e. INSTALLATION OF WINGWALLS) ARE COMPLETED. ANY VOIDS BETWEEN THE BOTTOM SLAB OF THE CULVERT AND THE COARSE AGGREGATE SHALL BE FILLED WITH FLOWABLE FILL PRIOR TO ANY BACKFILLING.

ADDENDA / REVISIONS

SCALE AS NOTED

CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT

T200507103

COUNTY

NEW CASTLE

BRIDGE NO.

1-085

DESIGNED BY:

GCL III / SR

CHECKED BY:

NED

STRUCTURAL DETAILS

SECTION

BR

SHEET NO.

21

BORING #B # 3	DATE DRILLED: 03/14/06	
STATION: 17+34	OFFSET: 3.6 L	ELEVATION: 326.63
CASING SIZE: 3¼" HOLLOW STEM AUGER		
SAMPLER: SPLIT-BARREL		
ENERGY PER BLOW (AVERAGE):		
WEIGHT OF HAMMER (W/H): 140 LB		WEIGHT OF ROD (W/R):
COMMENTS:		

SAMPLE NO.	DEPTH	BLOWS/	SAMPLE DESCRIPTION	REMARKS	CLASS
1	1.0'	9	Moist loose brown silty gravel w/some fine sand, trace of coarse sand.		A-2-4 (0)
	2.0'	5			
			8" Recovery		
2	2.0'	7	Wet very stiff brown gravelly fine sandy silt w/some coarse sand.		A-4 (0)
		8			
		8			
	4.0'	9	14" Recovery		
3	4.0'	20	Wet medium dense brown silty fine sandy gravel w/some coarse sand.		A-2-4 (0)
		15			
		8			
	6.0'	6	14" Recovery		
4A	6.0'	6	Wet medium dense brown silty fine sandy gravel w/some coarse sand. (11" Sample )	WATER DEPTH: 7.1'	A-2-4 (0)
		13			
4B	8.0'	9	No Sieve Analysis - Indication of wet brown silt w/some organic matter. (4" Sample)		-----
		4			
			15" Recovery		
5	8.0'	11	Wet very dense brownish gray fine to coarse sandy gravel w/some silt.		A-1-b (0)
	8.8'	50/4"			
			4" Recovery		
6	10.0'	26	Wet very dense brownish gray fine to coarse sandy gravel w/some silt.	BOTTOM OF STONE DEPTH = 10.7' (EL. 315.93)	A-1-b (0)
	10.9'	50/4"			
			7" Recovery		
Run # 1	11.0'	Core Drilling	Rock - ( Fractured Weathered Gneiss )		-----
	16.0'				
			53" Recovery = 88.3%	ROD = Rock Quality Designation	
			ROD = 8.3% (very poor)		
		( END )			

SAMPLE NO.	DEPTH	BLOWS/	SAMPLE DESCRIPTION	REMARKS	CLASS
-	0.0'		No Sampling - Augered to 12.0'.		
1	12.0'	50/4.5"	No Sieve Analysis - Indication of wet very dense weathered rock fragments.		-----
	12.4'				
			3" Recovery		
2	14.0'	50/5.5"	Wet very dense brown silty fine to coarse sand and gravel.		A-2-4 (0)
	14.4'				
			4" Recovery		
3	16.0'	50/3.5"	Wet very dense brown fine sandy gravel w/some silt and coarse sand.		A-1-b (0)
	16.3'				
			3" Recovery		
4	18.0'	50/5"	Wet very dense brown fine to coarse sandy gravel w/some silt.		A-1-b (0)
	18.4'				
			4" Recovery		
Run # 1	19.7'	Core Drilling	Rock - ( Weathered Fractured Gneiss )	ROD = Rock Quality Designation	-----
	24.7'				
			58" Recovery = 96.7%		
			ROD = 43.7% (poor)		
Run # 2	24.7'	Core Drilling	Rock - ( Weathered Fractured Gneiss )	ROD = Rock Quality Designation	-----
	30.0'				
			50" Recovery = 79.4%		
			ROD = 43.7% (poor)		
		( END )			

BORING #B # 4	DATE DRILLED: 03/15/06	
STATION: 17+10	OFFSET: 4.3 R	ELEVATION: 325.16
CASING SIZE: 3¼" HOLLOW STEM AUGER		
SAMPLER: SPLIT-BARREL		
ENERGY PER BLOW (AVERAGE):		
WEIGHT OF HAMMER (W/H): 140 LB		WEIGHT OF ROD (W/R):
COMMENTS:		

SAMPLE NO.	DEPTH	BLOWS/	SAMPLE DESCRIPTION	REMARKS	CLASS
1	1.0'	18	Wet very stiff brownish gray fine sandy silt w/some coarse sand, trace of gravel.		A-4 (0)
	2.0'	14			
			11" Recovery		
2	2.0'	9	Wet medium dense brown silty fine sand and gravel w/some coarse sand.		A-2-4 (0)
		13			
		12			
	4.0'	8	16" Recovery		
3	4.0'	6	Saturated firm brown fine sandy silt w/some coarse sand, trace of gravel.		A-4 (0)
		4			
		3			
	6.0'	4	14" Recovery		
4	6.0'	6	Saturated very stiff brown fine sandy silt w/some coarse sand, trace of gravel.		A-4 (0)
		7			
		12			
	8.0'	13	18" Recovery		
5	8.0'	2	Saturated very stiff brown fine to coarse sandy silt w/trace of gravel.	WATER DEPTH: 9.3'	A-4 (0)
		8			
		20			
	10.0'	20	18" Recovery		
6	10.0'	20	Saturated hard brown fine sandy silt w/some coarse sand, trace of gravel.	BOTTOM OF STONE DEPTH = 9.86' (EL. 315.30)	A-4 (0)
		28			
		35			
	12.0'	49	16" Recovery		
7	12.0'	9	Saturated very dense brown silty fine to coarse sand w/trace of gravel.		A-2-4 (0)
		20			
		40			
	13.7'	50/4"	17" Recovery		
8	14.0'	35	Saturated very dense brown silty fine to coarse sand w/trace of gravel.		A-2-4 (0)
	14.7'	50/3"			
			7" Recovery		
9	16.0'	11	Saturated very dense brown silty fine to coarse sand w/trace of gravel.		A-2-4 (0)
		31			
	17.3'	50/4"	14" Recovery		
10	18.0'	28	Saturated very dense brown fine to coarse sandy gravel w/some silt.		A-1-b (0)
	18.6'	50/1"			
			6" Recovery		
Run # 1	18.7'	Core Drilling	Rock - ( Weathered Fractured Gneiss )	ROD = Rock Quality Designation	-----
	23.2'				
			40" Recovery = 74.0%		
			ROD = 7.4% (very poor)		
		( END )			

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ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	BR 1-085	SOIL BORING LOGS	SECTION
				T200507103	DESIGNED BY: GCL III / SR			BR
				COUNTY				SHEET NO.
				NEW CASTLE	CHECKED BY: NED	22		

SUMP PITTS: THE INCOMING FLOW REACHES THE UPSTREAM SIDE OF THE BRIDGE ONLY DURING RAIN EVENTS. AT LOW FLOW, THE STREAM GOES UNDERGROUND IN THE VICINITY OF THE PROPOSED STILLING WELL. A SECOND SUMP PIT IS PROVIDED TO INTERCEPT ANY GROUNDWATER FLOW ENTERING THE UPSTREAM SIDE OF THE EXCAVATION.

THIS TEMPORARY CONSTRUCTION EASEMENT IS SOLELY FOR ACCESS TO ESTABLISH THE STREAM DIVERSION FAR ENOUGH UPSTREAM WHERE THERE IS SURFACE FLOW. THERE SHALL BE NO HEAVY EQUIPMENT IN THIS AREA. TREE OR SHRUB REMOVAL SHALL BE WITH THE FIELD ENGINEER'S APPROVAL ONLY AND ONLY IF ABSOLUTELY NECESSARY TO PLACE THE STREAM DIVERSION.

EXTRA SUMP PIT TO INTERCEPT GROUNDWATER FLOW

EXISTING STRUCTURE STA. 17+21.75 (APPROX.)

PLACE 3'-0" x 4'-6" STILLING WELL

PLACE SANDBAG DAM (1'-6" HIGH MAXIMUM)

STAGING AND STOCKPILING AREA (SEE PROJECT NOTE #17)

12" CFL

DP 46893 45834

LOC

12" CFL

LOC

16+00

17+00

TOS

LOC

TOS

18+00

TOS

19+00

20+00

TO CENTER MEETING ROAD

WOODS

WOODS

WOODS

SEQUENCE OF CONSTRUCTION:

1. PLACE COMPOST FILTER LOG, EXCEPT CONNECTION TO SANDBAG DIKES, AS SHOWN ON THE PLAN. CONSTRUCT SANDBAG DIKES IN THE EXISTING CHANNEL AND CONNECT THE COMPOST FILTER LOG TO THE SANDBAG DIKE TO ENCLOSE THE WORK AREA. INSTALL STILLING WELL AND STABILIZED OUTFALL USING R-5 RIPRAP.
2. WHEN CONSTRUCTION BEGINS AT THIS SITE, INSTALL PUMPS TO MAINTAIN STREAM FLOW AROUND THE WORK AREA. COMPOST FILTER LOG SHALL BE 18" IN DIAMETER UNLESS OTHERWISE SPECIFIED. THE STREAM DIVERSION SHALL BE INSTALLED AS PER ITEM 909005 - STREAM DIVERSIONS. INSTALL SUMP PIT AND DEWATERING BAG FOR USE IN DEWATERING THE WORK AREA. SEE SECTION III OF THE STANDARD SPECIFICATIONS FOR MORE INFORMATION ON DEWATERING OPERATIONS.
3. REMOVE THE EXISTING STONE MASONRY CULVERT IN ITS ENTIRETY AND IN ACCORDANCE WITH THE ENVIRONMENTAL COMPLIANCE NOTES. INSTALL THE PROPOSED PRECAST CULVERT AND WINGWALLS.
4. INSTALL RIPRAP, CHANNEL BED FILL AND SLOPE STABILIZATION AS NOTED, INCLUDING TRANSITIONS TO THE EXISTING CHANNEL.
5. INSTALL PROPOSED SWALE, PROPOSED PAVEMENT AND COMPLETE ANY OTHER REMAINING WORK.
6. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER VEGETATION HAS STABILIZED ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER.

ADDENDA / REVISIONS

SCALE



CULVERT REPLACEMENTS ON N239, PYLES FORD RD

CONTRACT

T200507103

COUNTY

NEW CASTLE

BRIDGE NO.

1-085

DESIGNED BY:

GCL III / SR

CHECKED BY:

NED

CONSTRUCTION PHASING AND EROSION CONTROL PLAN

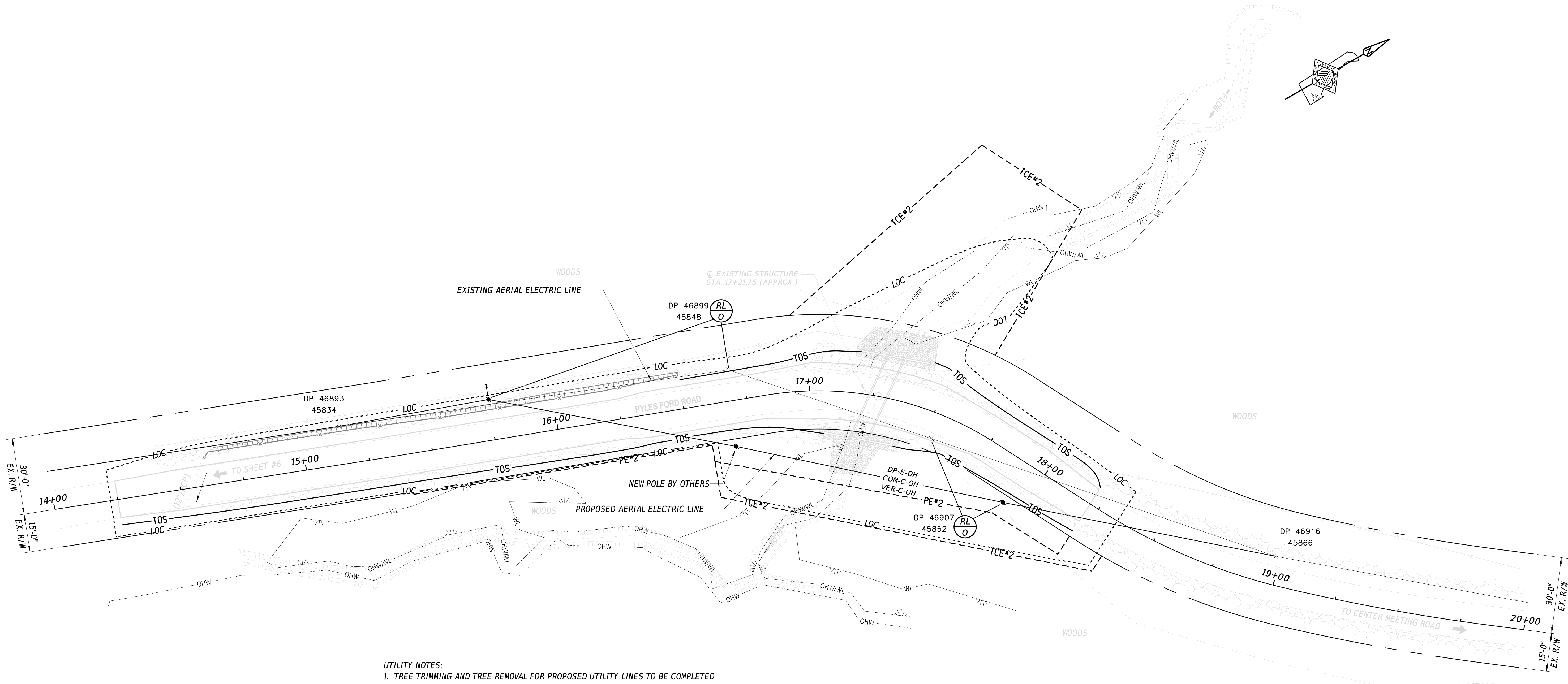
SECTION

BR

SHEET NO.

23

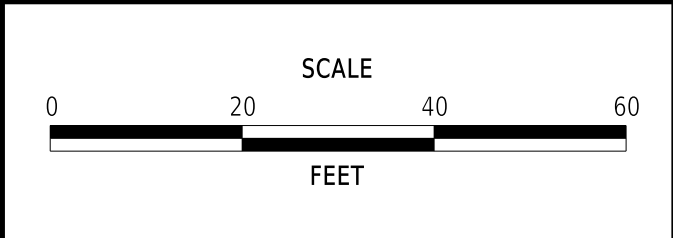




UTILITY NOTES:  
1. TREE TRIMMING AND TREE REMOVAL FOR PROPOSED UTILITY LINES TO BE COMPLETED BY THE DEPARTMENT PRIOR TO UTILITY RELOCATION. UTILITY RELOCATION TO BE COMPLETED BY OTHERS PRIOR TO CULVERT INSTALLATION AND ROAD WORK.

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ADDENDA / REVISIONS	



## CULVERT REPLACEMENTS ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-085
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

UTILITY RELOCATION PLAN	
SECTION	BR
SHEET NO.	24



ENVIRONMENTAL COMPLIANCE NOTES (BRIDGES 1-086 & 1-085)

1. GENERAL NOTES

A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.

B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHALL BE CONTACTED AT (302)760-2264 OR DOT\_ENVIRONMENTALSTUDIES@DELAWARE.GOV TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.

C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

NATURAL RESOURCE ISSUES:

A. PERMIT / APPROVAL REQUIREMENTS\*: CORPS OF ENGINEERS - NWP 3 (A) AND (C) WITH PRE-CONSTRUCTION NOTIFICATION, DNREC WETLANDS & SUBAQUEOUS LANDS PERMIT (WLSL) DNREC - WATER QUALITY CERTIFICATION (WQC) AND COASTAL ZONE CONSISTENCY (CZM) -- ISSUED (PROJECT IS NOT LOCATED IN CRW) NEW CASTLE COUNTY (NCC) - FLOODPLAIN APPROVAL\*\*

\* THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THIS APPROVAL.

\*\* THE CONTRACTOR MUST ENSURE THAT THIS PERMIT/APPROVAL IS IN HIS POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE IT IS DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.

B. CONSTRUCTION RESTRICTIONS:

FISHERIES - NONE

ENDANGERED SPECIES (BOG TURTLE) - REFER TO NOTE 6 FOR BOG TURTLE CONSTRUCTION RESTRICTIONS FOR BRIDGE 1-086. NO RESTRICTIONS EXIST AT BR 1-085.

MIGRATORY BIRDS - NONE

C. CULTURAL RESOURCE ISSUES:

A. BRIDGE 1-085 IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. SEE NOTE 3A ON SHEET 27 FOR HISTORIC COMPLIANCE COMMITMENTS FOR BRIDGE 1-085. SEE SPECIFIC ENVIRONMENTAL COMPLIANCE PLANS SHEETS FOR NOTE PERTAINING TO EACH STRUCTURE.

B. DISPOSAL OF MATERIALS MUST BE IN UPLAND, NON-ARCHAEOLOGICAL SENSITIVE SITE(S). SITES MUST BE REVIEWED AND APPROVED BY DELDOT ENVIRONMENTAL STUDIES STAFF (DOT\_ENVIRONMENTALSTUDIES@DELAWARE.GOV) PRIOR TO PHYSICAL CONSTRUCTION MOVEMENT.

4. STREAM RESTORATION AND RIPRAP TREATMENTS:

A. THE CONTRACTOR SHALL FOLLOW THE SPECIAL PROVISIONS OF ITEM #712531 - CHANNEL BED FILL IN REGARDS TO THE SALVAGING OF ON-SITE NATURAL STREAM BOTTOM MATERIAL OR THE FURNISHING OF OFF-SITE MATERIAL. IF SUFFICIENT SOURCES FOR CHANNEL BED FILL DO NOT EXIST ON-SITE, ANY NEW MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF ITEM #712531 - CHANNEL BED FILL. ALL RIPRAP IN THE CHANNEL BOTTOM (I.E. BELOW THE WATER LINE) SHALL BE RECESSED ONE FOOT BELOW STREAM BED ELEVATION AND CHOKED WITH BORROW TYPE 'B' SO THAT ALL OF THE VOIDS IN THE RIPRAP ARE FILLED WITH MATERIAL. PAYMENT UNDER ITEM #209002 - BORROW TYPE 'B'. THE RIPRAP SHALL THEN BE COVERED WITH A MINIMUM OF 12" CHANNEL BED FILL. FINAL CHANNEL ELEVATIONS SHALL MATCH EXISTING ELEVATIONS AT THE UPSTREAM AND DOWNSTREAM PROJECT LIMITS. THROUGH THE STRUCTURE, ELEVATIONS SHALL BE AS NOTED ON THE PLANS. PAYMENT UNDER ITEM #712531 - CHANNEL BED FILL.

B. RESTORE OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, TEMPORARY PIPES AND/OR SANDBAG DIKES AND DIVERSIONS) TO EXISTING CONDITIONS, FILL ANY CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES WITH CHANNEL BED FILL PAYMENT UNDER ITEM #712531 - CHANNEL BED FILL.

C. CHOKE ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, WITH DELAWARE #57 STONE. PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF TOPSOIL THROUGHT THE RIPRAP, AND THE FINISH FILLING THE VOIDS WITH TOPSOIL SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. PLACE AN ADDITIONAL 6-INCH TOPSOIL LAYER ON TOP OF THE RIPRAP. SLOPE SEEDING WILL BE DONE WITH ITEM 734531 - STREAMBANK SEED MIX. FOLLOWING THE SEEDING OPERATION, INSTALL ITEM 735535 - EROSION CONTROL BLANKET (ECB) MULCH, OR OTHER BLANKET AS SHOWN ON THE PLANS. ECB AT TOE OF SLOPE CAN BE EITHER TRENCHED IN OR STAPLED AT 6" ON CENTER. COMPLETE ALL WORK, STARTING WITH THE INITIAL CHOKING WITH TOPSOIL, THROUGH THE SEEDING AND MULCHING PRIOR TO ANY RAIN EVENT. DELAWARE #57 STONE IS INCIDENTAL TO THE RIPRAP ITEM. ALL OTHER ITEMS WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

D. THE TOPSOIL/SEED/MULCH CAN BE PLACED BEFORE OR AFTER THE REMOVAL OF THE STREAM DIVERSION. IF IT OCCURS AFTER STREAM DIVERSION REMOVAL, A TURBIDITY CURTAIN SHALL BE USED TO MINIMIZE IN STREAM SEDIMENTATION. PAYMENT SHALL BE INCIDENTAL TO ITEM 265500 - STREAM DIVERSION.

5. PROTECTION OF RESOURCES:

A. KEEP CLEARING IN WETLAND AREAS TO A MINIMUM ABSOLUTELY NECESSARY FOR CONSTRUCTION ACCESS. SUPPORT ALL EQUIPMENT TRAVERSING WETLANDS AND SUBAQUEOUS LAND ON MATS. PAYMENT FOR MATS IS WILL BE MADE UNDER ITEM 601520 - TEMPORARY TIMBER MAT. IN WETLAND AREAS THAT ARE CLEARED, NO GRUBBING EXCEPT WHERE NECESSARY TO CONSTRUCT PROJECT COMPONENTS SUCH AS FOUNDATIONS AND RIPRAP PROTECTION IS PERMITTED. CUT VEGETATION FLUSH WITH THE GROUND (I.E. NO DISTURBANCE OF THE ROOT MAT). RESTORE TEMPORARILY DISTURBED WETLAND AREAS TO GRADE AND SEED WITH ITEM 743017 - TEMPORARY GRASS SEEDING (ANNUAL RYEGRASS).

B. USE SILT FENCE OR CONSTRUCTION SAFETY FENCE ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER WETLANDS ARE BEING IMPACTED (AS SHOWN ON ENVIRONMENTAL COMPLIANCE SHEETS), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LIMIT OF CONSTRUCTION (AS SHOWN ON CONSTRUCTION PLAN SHEETS). ANY CONTRACTOR ACCESS BEYOND THE LIMIT OF CONSTRUCTION IS STRICTLY PROHIBITED.

C. USE SANDBAGS OR COMPOST FILTER LOG (CFL) TO SECURE SILT FENCE AT AREAS ADJACENT TO WOODED UPLANDS/ ALL WETLANDS IN LIEU OF TRENCHING UNLESS PROPER EROSION AND SEDIMENT CONTROL CANNOT BE MAINTAINED. REMOVE SANDBAGS AND CFLS (AND CONTENTS) IN THEIR ENTIRETY WHEN NO LONGER NEEDED. SANDBAGS/CFLS USED TO SECURE THE SILT FENCE IS INCIDENTAL TO ITEM 251000 - SILT FENCE. THE ENVIRONMENTAL STUDIES SECTION (302-760-2259 OR DOT\_ENVIRONMENTALSTUDIES@DELAWARE.GOV) CAN PROVIDE FURTHER GUIDANCE REGARDING THIS METHOD OF INSTALLATION.

D. CLEARLY MARK ALL TREES TO BE REMOVED WITH PAINT PRIOR TO THE EROSION AND SEDIMENT CONTROL MEETING.
6. BOG TURTLE PROTECTION (BR 1-086 ONLY)

A. HIBERNATION SEASON GUIDANCE (NOVEMBER 15-FEBRUARY 28/29)

I. CONDUCT ANY WORK THAT IS FEASIBLE TO DO DURING THIS TIME PERIOD, AS WORK DURING THIS TIME WILL HAVE THE LEAST IMPACT TO BOG TURTLES.

II. A QUALIFIED BOG TURTLE SURVEYOR (QBTS) SHOULD BE PRESENT WHENEVER ANY DISTURBANCES OCCUR WITHIN STREAM/WETLAND HABITAT, INCLUDING, BUT NOT LIMITED TO, CULVERT REMOVAL AND EXCAVATION OF SOILS.

III. THE QBTS WILL CHECK ALL AREAS WITHIN THE LOD WHERE TURTLES MIGHT HIBERNATE (I.E. UNDER STREAM BANKS, AMONG TREE ROOTS, IN TUNNELS/SPRINGS WITH MOVING WATER) PRIOR TO WORK BEGINNING WITHIN STREAM/WETLAND HABITAT AND AFTER HEAVY EQUIPMENT IS USED THAT CAUSES GROUND VIBRATIONS OR CHANGES IN WATER LEVELS (I.E. AFTER A COFFERDAM IS COMPLETED, WHEN HEAVY EQUIPMENT IS DELIVERING SOIL OR ROCKS, WHEN JACKHAMMERS ARE USED, ETC.)

B. ACTIVE SEASON GUIDANCE (MARCH 1-NOVEMBER 14)

I. A SILT FENCE SHALL BE INSTALLED AROUND THE LOD PRIOR TO HEAVY EQUIPMENT LEAVING THE ROAD SURFACE. THE SILT FENCE WILL BE INSTALLED BY HAND WITH THE BOTTOM EDGE FLARED AWAY FROM THE LOD AND SECURED WITH SANDBAGS PLACED OUTSIDE THE LOD, TO PREVENT TURTLE MOVEMENT UNDER THE FENCE. NO TRENCHING SHALL OCCUR THROUGH POTENTIAL BOG TURTLE HABITAT. THE SILT FENCE SHOULD BE TIED INTO EXISTING OR TEMPORARY STRUCTURES (I.E. ROAD EDGE, CONCRETE BARRIERS, COFFERDAMS); OPEN ENDS SHOULD BE CURLED AWAY FROM THE LOD. THE QBTS WILL ENSURE PROPER INSTALLMENT OF THE SILT FENCE REGARDING EFFECTIVENESS AS A TURTLE BARRIER. FOR SILT FENCE INSTALLED ACROSS MUCKY SOILS, THE QBTS WILL SEARCH AND IDENTIFY SUBSURFACE TUNNELS THAT MAY PASS UNDERNEATH.

II. THE QBTS SHOULD BE PRESENT FROM INSTALLATION TO REMOVAL OF THE SILT FENCE WHENEVER WORK IS OCCURRING OFF THE ROAD SURFACE.

III. THE QBTS WILL CONDUCT A SEARCH OF THE LOD FOR BOG TURTLES PRIOR TO HEAVY EQUIPMENT ENTERING THE LOD. THIS WILL OCCUR THE MORNING OF EACH WORKDAY AND PRIOR TO RESUMING WORK AFTER LONG BREAKS. WHEN THE LOD INCLUDES MUCKY SOILS, THIS MAY TAKE CONSIDERABLE TIME.

IV. ANY MUCKY SOILS WITHIN THE LOD WILL BE THOROUGHLY SEARCHED BY MUDDLING BY THE QBTS. IF ANY SUBSURFACE TUNNELS ARE IDENTIFIED PASSING UNDER THE SILT FENCE, THE IMMEDIATE AREA OUTSIDE THE LOD SHOULD BE SEARCHED.

V. FOR IN-STREAM WORK, THE QBTS WILL NEED TO SURVEY THE ENTIRE STREAM BOTTOM AND UNDERBANK AREAS AS BEST AS POSSIBLE.

VI. THE QBTS WILL NEED TO CHECK SILT FENCES/BARRIERS (BOTH SIDES) MANY TIMES PER DAY TO ENSURE NO TURTLES ARE TRAPPED IN THE WORK ZONE.

VII. THE QBTS WILL CLOSELY MONITOR EARTH-MOVING OPERATIONS FOR ANY TURTLES IN THE SOIL BEING MOVED.

C. THE FOLLOWING APPLIES TO BOTH SEASONS:

I. A QUALIFIED BOG TURTLE SURVEYOR (QBTS) SHALL BE EMPLOYED TO ENSURE TAKE DOES NOT OCCUR.

II. THE QBTS WILL HAVE THE AUTHORITY TO SIGNAL FOR AN IMMEDIATE TEMPORARY STOP TO EQUIPMENT OPERATION IF IT LOOKS LIKE THERE ARE TURTLES IN THE AREA WHERE WORK IS OCCURRING. THIS AUTHORITY AND THE QBTS ROLE SHOULD BE COMMUNICATED TO THE WORK CREW DURING A SITE MEETING PRIOR TO WORK COMMENCING.

III. SOIL DISTURBANCE WITHIN POTENTIAL BOG TURTLE WETLANDS SHALL BE MINIMIZED TO MAINTAIN THE NATIVE PLANT COMMUNITY AND MINIMIZE ESTABLISHMENT OF NON-NATIVE PLANTS. ANY EXCAVATION OR OTHER ACTIVITIES THAT COULD INFLUENCE LONG-TERM WETLAND HYDROLOGY (EITHER DRAINING OR PONDING WATER) SHOULD BE AVOIDED. ANY EXCAVATED OR DISTURBED AREAS ADJACENT TO THE WETLANDS SHOULD BE RESTORED TO THEIR ORIGINAL CONDITION (GRADED OR SEEDED) TO PREVENT SEDIMENTATION FROM OCCURRING IN WETLANDS.

D. IF THE ABOVE PRECAUTIONS ARE FOLLOWED AND TAKE STILL OCCURS, AN INCIDENT REPORT SHOULD BE PREPARED BY THE QBTS AND TREVOR CLARK OF THE U.S. FISH AND WILDLIFE SERVICE NEEDS TO BE NOTIFIED IMMEDIATELY AT (410)-573-4527 OR TREVOR.CLARK@FWS.GOV.
7. SEE EACH ENVIRONMENTAL COMPLIANCE PLAN SHEET FOR ADDITIONAL SITE SPECIFIC NOTES.

WETLANDS DELINEATED BY MCCORMICK TAYLOR IN NOVEMBER 2019 IN ACCORDANCE WITH THE US ARMY CORPS OF ENGINEERS "CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987)".  
ORIGINAL SHEET PREPARED BY JASON MCCLUSKEY, ON 3/28/08. SHEET LAST UPDATED BY SANTIAGO RODRIGUEZ ON 6/24/20.

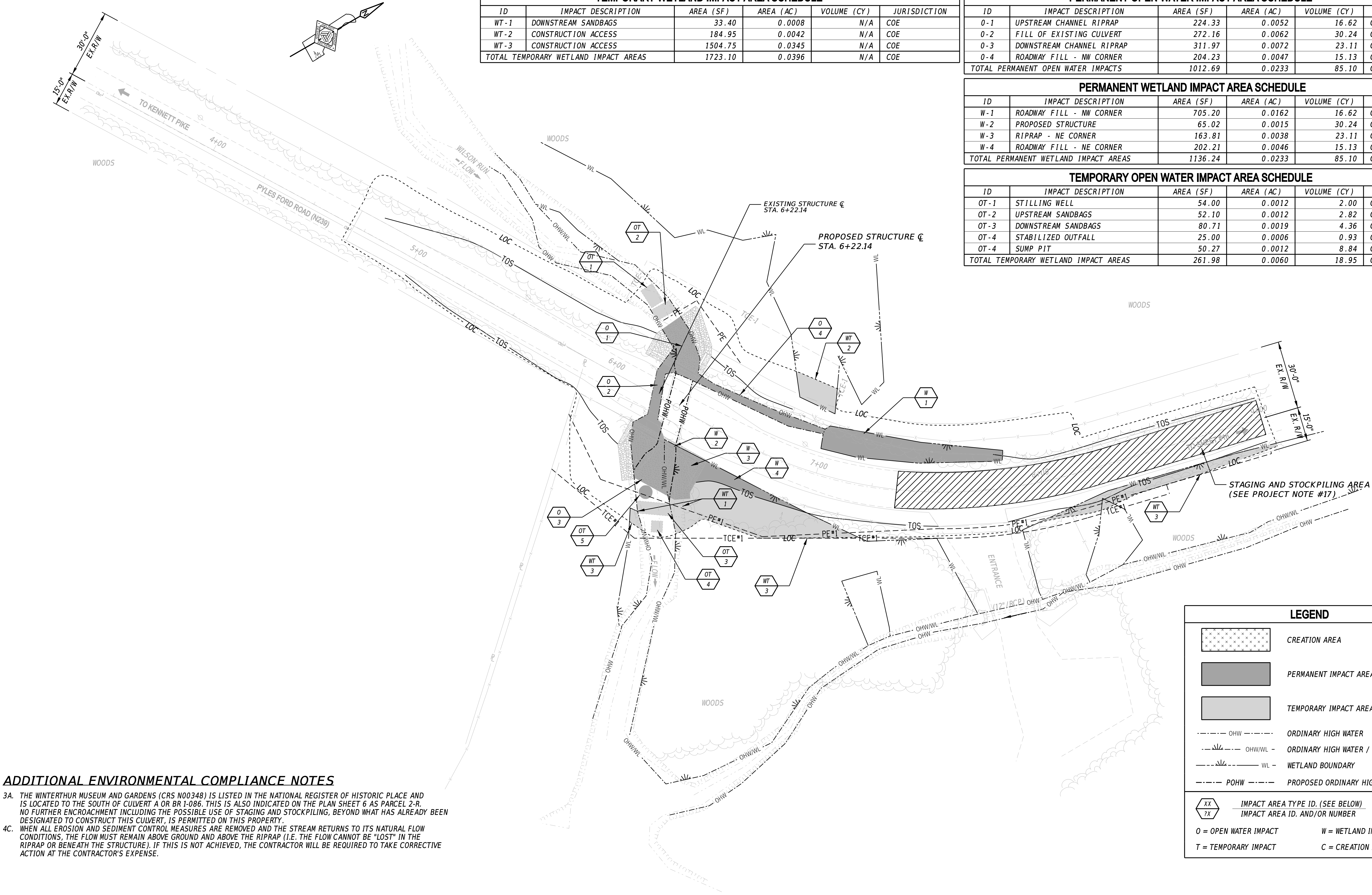
ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	1-085 & 1-086	ENVIRONMENTAL COMPLIANCE NOTES	SECTION
				T200507103	DESIGNED BY: GCL III / SR	BR		
				COUNTY		SHEET NO.		
				NEW CASTLE	CHECKED BY: NED	25		

TEMPORARY WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	DOWNSTREAM SANDBAGS	33.40	0.0008	N/A	COE
WT-2	CONSTRUCTION ACCESS	184.95	0.0042	N/A	COE
WT-3	CONSTRUCTION ACCESS	1504.75	0.0345	N/A	COE
TOTAL TEMPORARY WETLAND IMPACT AREAS		1723.10	0.0396	N/A	COE

PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
0-1	UPSTREAM CHANNEL RIPRAP	224.33	0.0052	16.62	COE/DNREC
0-2	FILL OF EXISTING CULVERT	272.16	0.0062	30.24	COE/DNREC
0-3	DOWNSTREAM CHANNEL RIPRAP	311.97	0.0072	23.11	COE/DNREC
0-4	ROADWAY FILL - NW CORNER	204.23	0.0047	15.13	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		1012.69	0.0233	85.10	COE/DNREC

PERMANENT WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
W-1	ROADWAY FILL - NW CORNER	705.20	0.0162	16.62	COE
W-2	PROPOSED STRUCTURE	65.02	0.0015	30.24	COE
W-3	RIPRAP - NE CORNER	163.81	0.0038	23.11	COE
W-4	ROADWAY FILL - NE CORNER	202.21	0.0046	15.13	COE
TOTAL PERMANENT WETLAND IMPACT AREAS		1136.24	0.0233	85.10	COE

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	STILLING WELL	54.00	0.0012	2.00	COE/DNREC
OT-2	UPSTREAM SANDBAGS	52.10	0.0012	2.82	COE/DNREC
OT-3	DOWNSTREAM SANDBAGS	80.71	0.0019	4.36	COE/DNREC
OT-4	STABILIZED OUTFALL	25.00	0.0006	0.93	COE/DNREC
OT-4	SUMP PIT	50.27	0.0012	8.84	COE/DNREC
TOTAL TEMPORARY WETLAND IMPACT AREAS		261.98	0.0060	18.95	COE/DNREC

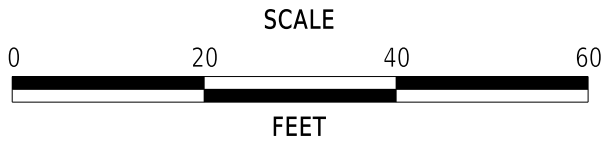


ADDITIONAL ENVIRONMENTAL COMPLIANCE NOTES

- 3A. THE WINTERTHUR MUSEUM AND GARDENS (CRS N00348) IS LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACE AND IS LOCATED TO THE SOUTH OF CULVERT A OR BR 1-086. THIS IS ALSO INDICATED ON THE PLAN SHEET 6 AS PARCEL 2-R. NO FURTHER ENCROACHMENT INCLUDING THE POSSIBLE USE OF STAGING AND STOCKPILING, BEYOND WHAT HAS ALREADY BEEN DESIGNATED TO CONSTRUCT THIS CULVERT, IS PERMITTED ON THIS PROPERTY.
- 4C. WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND AND ABOVE THE RIPRAP (I.E. THE FLOW CANNOT BE "LOST" IN THE RIPRAP OR BENEATH THE STRUCTURE). IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.

LEGEND	
	CREATION AREA
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
----- OHW -----	ORDINARY HIGH WATER
--- OHW/WL ---	ORDINARY HIGH WATER / WETLAND
--- WL ---	WETLAND BOUNDARY
--- POHW ---	PROPOSED ORDINARY HIGH WATER
	IMPACT AREA TYPE ID. (SEE BELOW)
	IMPACT AREA ID. AND/OR NUMBER
O = OPEN WATER IMPACT      W = WETLAND IMPACT	
T = TEMPORARY IMPACT      C = CREATION AREA	

ADDENDA / REVISIONS



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-086
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

ENVIRONMENTAL  
COMPLIANCE PLAN

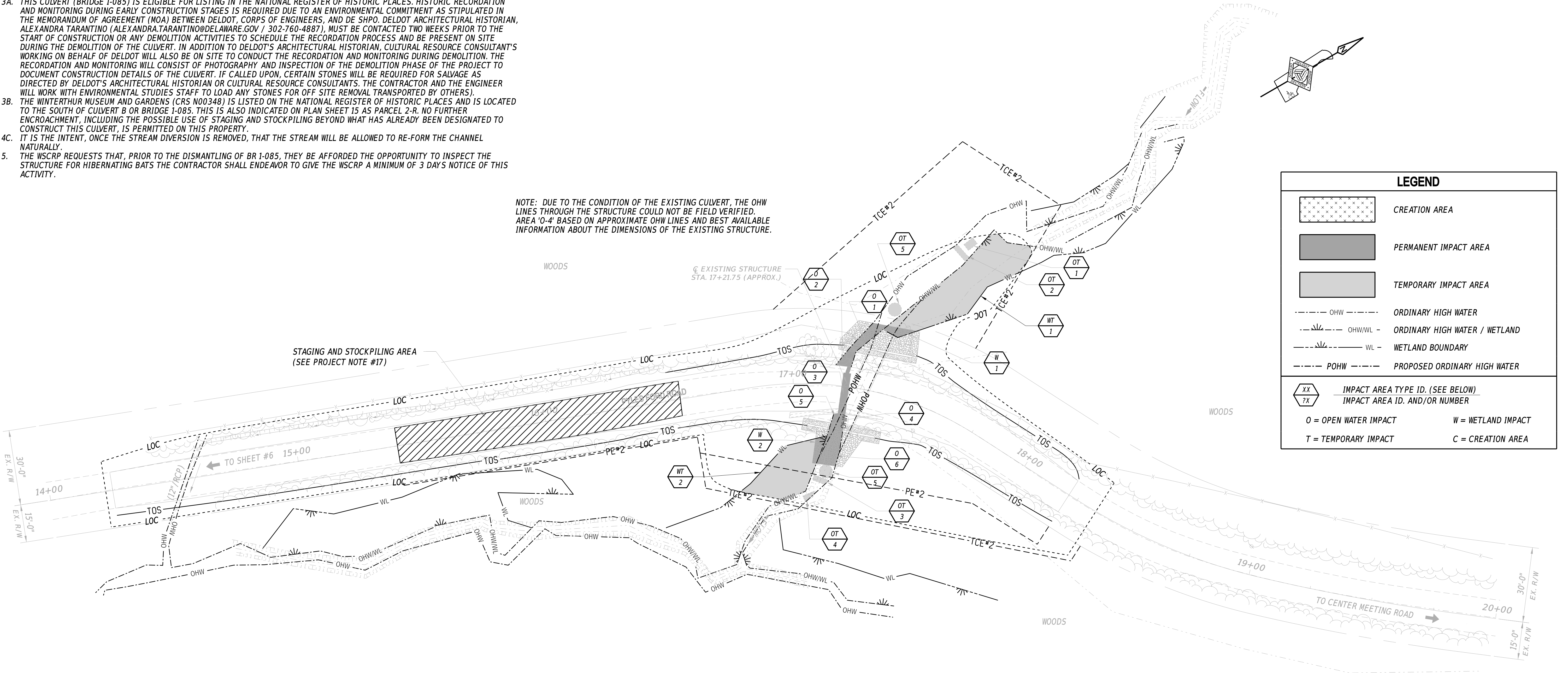
SECTION
BR
SHEET NO.
26



ADDITIONAL ENVIRONMENTAL COMPLIANCE NOTES

- 2A. CORPS OF ENGINEERS - NWP#3 (PCN REQUIRED)
- 3A. THIS CULVERT (BRIDGE 1-085) IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. HISTORIC RECORDATION AND MONITORING DURING EARLY CONSTRUCTION STAGES IS REQUIRED DUE TO AN ENVIRONMENTAL COMMITMENT AS STIPULATED IN THE MEMORANDUM OF AGREEMENT (MOA) BETWEEN DELDOT, CORPS OF ENGINEERS, AND DE SHPO. DELDOT ARCHITECTURAL HISTORIAN, ALEXANDRA TARANTINO (ALEXANDRA.TARANTINO@DELAWARE.GOV / 302-760-4887), MUST BE CONTACTED TWO WEEKS PRIOR TO THE START OF CONSTRUCTION OR ANY DEMOLITION ACTIVITIES TO SCHEDULE THE RECORDATION PROCESS AND BE PRESENT ON SITE DURING THE DEMOLITION OF THE CULVERT. IN ADDITION TO DELDOT'S ARCHITECTURAL HISTORIAN, CULTURAL RESOURCE CONSULTANT'S WORKING ON BEHALF OF DELDOT WILL ALSO BE ON SITE TO CONDUCT THE RECORDATION AND MONITORING DURING DEMOLITION. THE RECORDATION AND MONITORING WILL CONSIST OF PHOTOGRAPHY AND INSPECTION OF THE DEMOLITION PHASE OF THE PROJECT TO DOCUMENT CONSTRUCTION DETAILS OF THE CULVERT. IF CALLED UPON, CERTAIN STONES WILL BE REQUIRED FOR SALVAGE AS DIRECTED BY DELDOT'S ARCHITECTURAL HISTORIAN OR CULTURAL RESOURCE CONSULTANTS. THE CONTRACTOR AND THE ENGINEER WILL WORK WITH ENVIRONMENTAL STUDIES STAFF TO LOAD ANY STONES FOR OFF SITE REMOVAL TRANSPORTED BY OTHERS).
- 3B. THE WINTERTHUR MUSEUM AND GARDENS (CRS N00348) IS LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES AND IS LOCATED TO THE SOUTH OF CULVERT B OR BRIDGE 1-085. THIS IS ALSO INDICATED ON PLAN SHEET 15 AS PARCEL 2-R. NO FURTHER ENCROACHMENT, INCLUDING THE POSSIBLE USE OF STAGING AND STOCKPILING BEYOND WHAT HAS ALREADY BEEN DESIGNATED TO CONSTRUCT THIS CULVERT, IS PERMITTED ON THIS PROPERTY.
- 4C. IT IS THE INTENT, ONCE THE STREAM DIVERSION IS REMOVED, THAT THE STREAM WILL BE ALLOWED TO RE-FORM THE CHANNEL NATURALLY.
5. THE WSCR P REQUESTS THAT, PRIOR TO THE DISMANTLING OF BR 1-085, THEY BE AFFORDED THE OPPORTUNITY TO INSPECT THE STRUCTURE FOR HIBERNATING BATS THE CONTRACTOR SHALL ENDEAVOR TO GIVE THE WSCR P A MINIMUM OF 3 DAYS NOTICE OF THIS ACTIVITY.

NOTE: DUE TO THE CONDITION OF THE EXISTING CULVERT, THE OHW LINES THROUGH THE STRUCTURE COULD NOT BE FIELD VERIFIED. AREA 'O-4' BASED ON APPROXIMATE OHW LINES AND BEST AVAILABLE INFORMATION ABOUT THE DIMENSIONS OF THE EXISTING STRUCTURE.



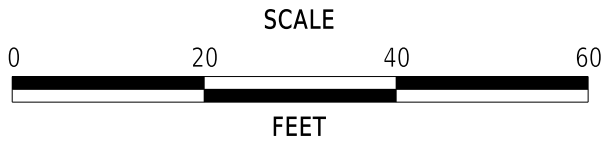
PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	UPSTREAM RIPRAP	44.23	0.0010	3.28	COE/DNREC
O-2	ROADWAY FILL - SW CORNER	39.80	0.0009	5.60	COE/DNREC
O-3	FILL OF EX. STRUCTURE	52.18	0.0012	1.93	COE/DNREC
O-4	DS STRUCTURE EXTENSION	24.56	0.0006	1.44	COE/DNREC
O-5	ROADWAY FILL - SE CORNER	11.31	0.0003	2.01	COE/DNREC
O-6	DOWNSTREAM RIPRAP	93.84	0.0022	6.95	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		265.92	0.0061	21.21	COE/DNREC

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	STILLING WELL	13.50	0.0003	0.50	COE/DNREC
OT-2	UPSTREAM SANDBAGS	16.30	0.0004	0.57	COE/DNREC
OT-3	DOWNSTREAM SANDBAGS	12.48	0.0003	0.46	COE/DNREC
OT-4	STABILIZED OUTFALL	8.96	0.0002	0.33	COE/DNREC
OT-5	SUMP PITS	45.13	0.0010	7.94	COE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		96.37	0.0022	9.80	COE/DNREC

PERMANENT WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
W-1	UPSTREAM RIPRAP	30.27	0.0007	N/A	COE
W-2	RIPRAP - SE CORNER	30.79	0.0007	N/A	COE
TOTAL PERMANENT WETLAND IMPACT AREAS		61.06	0.0014	N/A	COE

TEMPORARY WETLAND IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	CONSTRUCTION ACCESS	801.97	0.0184	N/A	COE
WT-2	CONSTRUCTION ACCESS	410.95	0.0094	N/A	COE
TOTAL TEMPORARY WETLAND IMPACT AREAS		1212.92	0.0278	N/A	COE

ADDENDA / REVISIONS



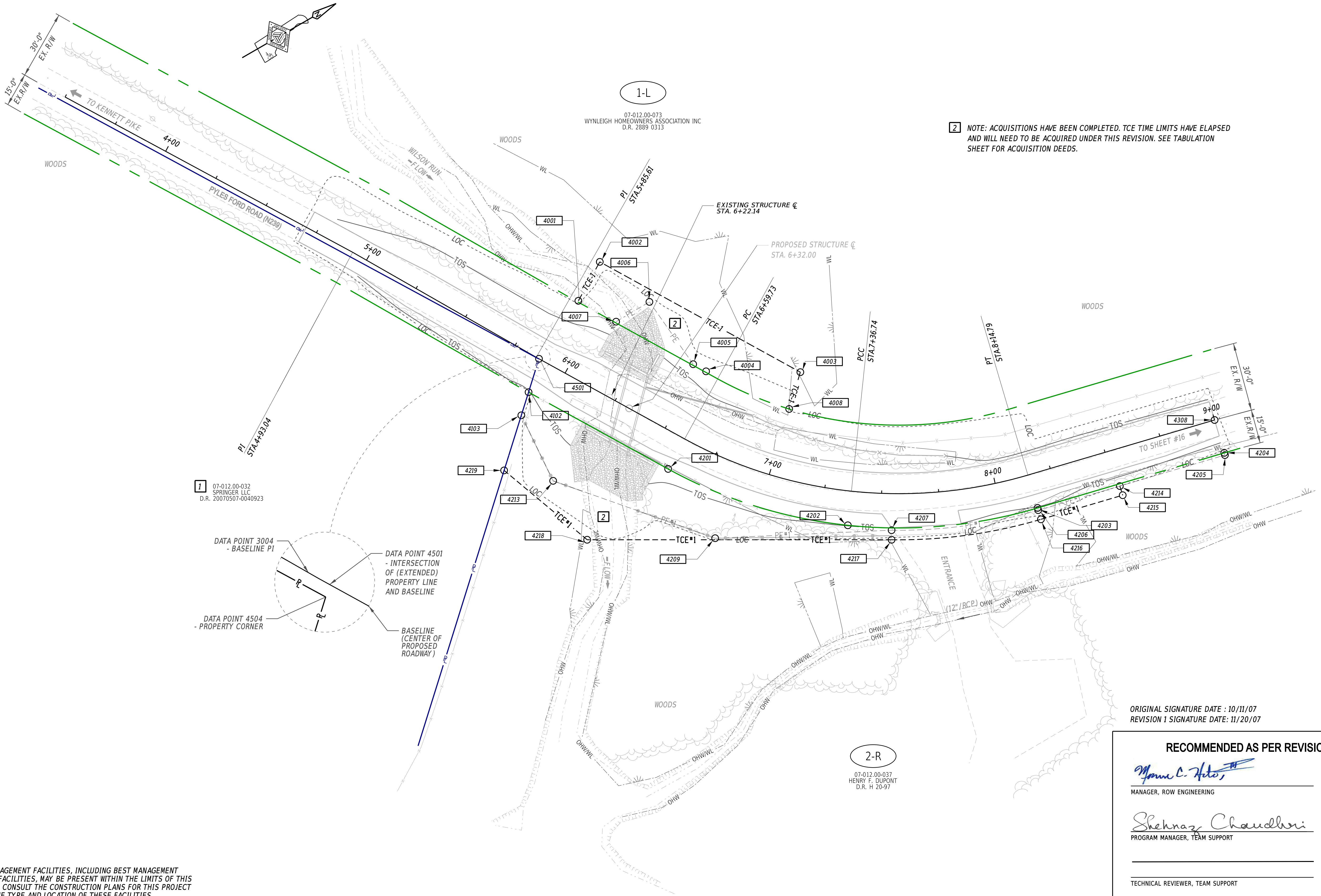
CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT	BRIDGE NO.	1-085
T200507103	DESIGNED BY:	GCL III / SR
COUNTY	CHECKED BY:	NED
NEW CASTLE		

ENVIRONMENTAL  
COMPLIANCE PLAN

SECTION
BR
SHEET NO.
27





NOTE:  
STORMWATER MANAGEMENT FACILITIES, INCLUDING BEST MANAGEMENT PRACTICE (BMP) FACILITIES, MAY BE PRESENT WITHIN THE LIMITS OF THIS PROJECT. PLEASE CONSULT THE CONSTRUCTION PLANS FOR THIS PROJECT TO DETERMINE THE TYPE AND LOCATION OF THESE FACILITIES.

ORIGINAL SIGNATURE DATE : 10/11/07  
REVISION 1 SIGNATURE DATE: 11/20/07

RECOMMENDED AS PER REVISION 2

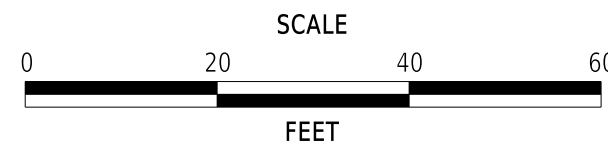
*Manu C. Hito, PE*  
MANAGER, ROW ENGINEERING 06/02/2020  
DATE

*Shehnaz Chaudhri*  
PROGRAM MANAGER, TEAM SUPPORT 06/02/2020  
DATE

TECHNICAL REVIEWER, TEAM SUPPORT DATE

ADDENDA / REVISIONS

- 1 DELETED ACQUISITION FROM PARCEL 1-R
- 2 ACQUISITION HAS BEEN COMPLETED.  
REVISION UPDATES CONSTRUCTION PLAN  
DETAILS FROM 2007 PLANS.



CULVERT REPLACEMENTS  
ON N239, PYLES FORD RD

CONTRACT  
T200507103  
COUNTY  
NEW CASTLE

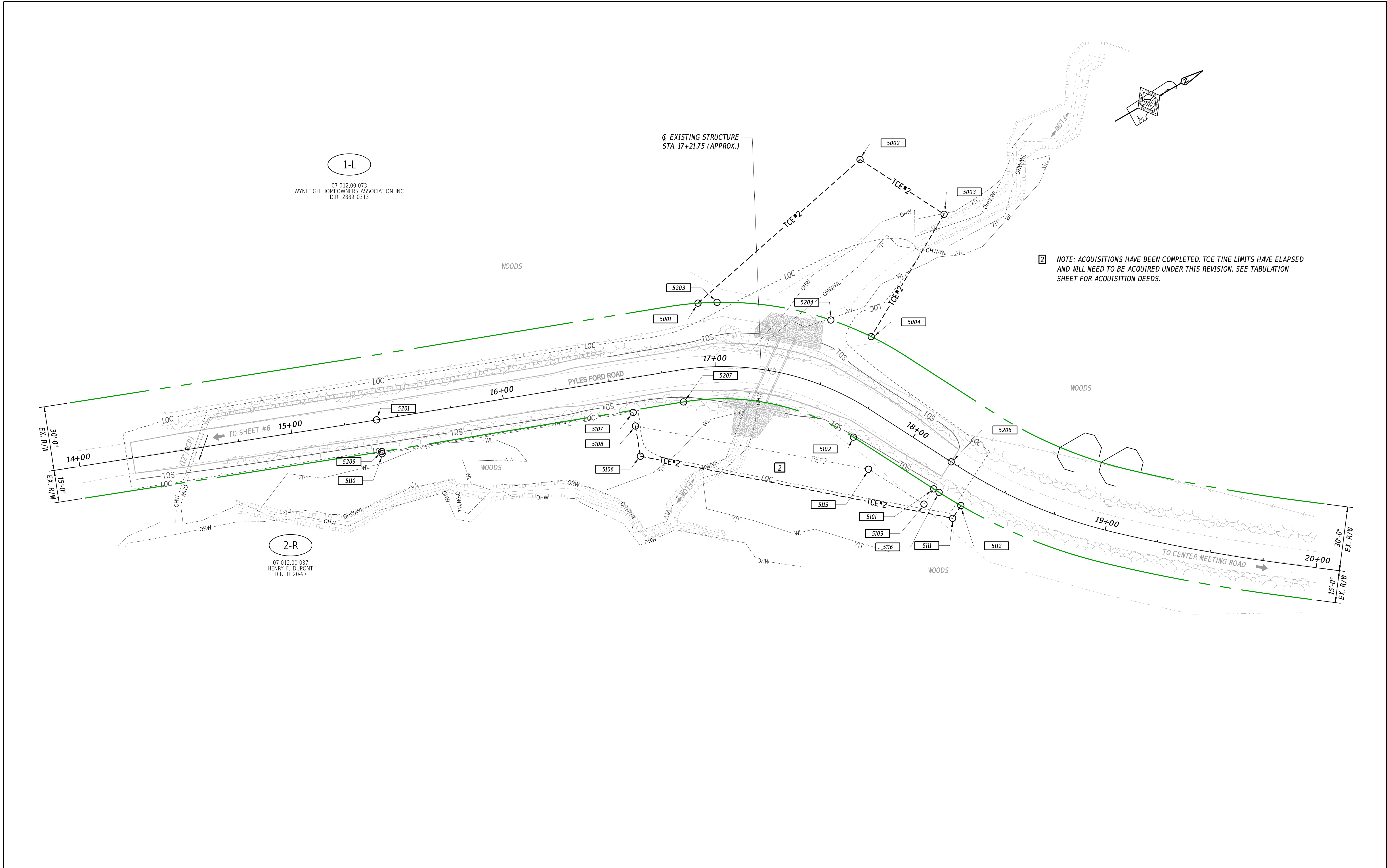
BRIDGE NO.  
1-086  
DESIGNED BY: GCL III / SR  
CHECKED BY: NED

RIGHT-OF-WAY PLAN

SECTION  
BR  
SHEET NO.  
28



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ADDENDA / REVISIONS		SCALE 0 20 40 60 FEET	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	RIGHT-OF-WAY PLAN	SECTION
2	ACQUISITION HAS BEEN COMPLETED. REVISION UPDATES CONSTRUCTION PLAN DETAILS FROM 2007 PLANS.			T200507103	1-085		BR
				COUNTY	DESIGNED BY: GCL III / SR		SHEET NO.
				NEW CASTLE	CHECKED BY: NED		29



METES AND BOUNDS													
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric		PARCEL AREA (US)	
07-012.00-073		1-L WYNLEIGH HOMEOWNERS ASSOCIATION INC				P/E		2889-0313		5.6698 h		14.01 A	
ALIGNMENT NUMBER 3000													
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH		RADIUS		
4007	6+08.725	-30.507	N 0°42' 14.259" W	5.1670	(16.952)								
4006	6+17.326	-45.115	N 84°55' 42.264" E	10.1575	(33.325)								
4005	6+47.247	-30.443	S 58°54' 07.947" W	11.7415	(38.522)								
4007	6+08.725	-30.507											
Figure 4007 area = 26.1644 sq. m		0.0024 hectares				(281.640 sq. ft.		0.006 acres)					
METES AND BOUNDS													
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric		PARCEL AREA (US)	
07-012.00-073		1-L WYNLEIGH HOMEOWNERS ASSOCIATION INC				TCE #1		2889-0313		5.6698 h		14.01 A	
ALIGNMENT NUMBER 3000													
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH		RADIUS		
4001	5+89.846	-30.539	N 31°11' 34.738" W	5.9317	(19.461)								
4002	5+89.846	-50.000	N 58°48' 24.657" E	30.5367	(100.186)								
4003	7+00.000	-46.835	S 43°07' 05.241" E	4.7591	(15.614)								
4008	7+00.000	-31.221				S 52°37' 11.937" W	12.1277	(39.789)	12.1521	(39.869)	55.4736	(182.000)	
4004	6+53.701	-30.435	S 58°52' 40.935" W	1.9672	(6.454)								
4005	6+47.247	-30.443	S 84°55' 42.264" W	10.1575	(33.325)								
4006	6+17.326	-45.115	S 0°42' 14.259" E	5.1670	(16.952)								
4007	6+08.725	-30.507	S 58°54' 14.881" W	5.7543	(18.879)								
4001	5+89.846	-30.539											
Figure 4001 area = 154.0189 sq. m		0.0154 hectares				(1657.900 sq. ft.		0.038 acres)					
METES AND BOUNDS													
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric		PARCEL AREA (US)	
07-012.00-037		2-R HENRY F. DUPONT				R/W #1		H20-97		280.7080 h		693.62 A	
ALIGNMENT NUMBER 3000													
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH		RADIUS		
4102	5+90.012	15.000	N 42°38' 59.107" W	4.6650	(15.305)								
4501	5+86.972	0.000	N 58°48' 25.262" E	22.1754	(72.754)								
3005	6+59.726	0.000				N 47°24' 18.829" E	23.3190	(76.506)	23.4736	(77.013)	58.9791	(193.501)	
3007	7+36.739	-0.000				N 24°47' 04.253" E	23.6391	(77.556)	23.7909	(78.054)	60.7506	(199.313)	
3009	8+14.793	0.000	N 13°33' 56.110" E	25.9711	(85.207)								
4308	9+00.000	0.000	S 76°26' 03.890" E	4.5720	(15.000)								
4204	9+00.000	15.000	S 13°33' 56.110" W	25.9711	(85.207)								
4203	8+14.793	15.000				S 24°47' 04.270" W	25.4182	(83.393)	25.5813	(83.928)	65.3226	(214.313)	
4202	7+36.739	15.000				S 47°24' 18.844" W	25.1265	(82.436)	25.2932	(82.983)	63.5511	(208.501)	
4201	6+59.726	15.000	S 58°48' 25.262" W	21.2488	(69.714)								
4102	5+90.012	15.000											
Figure 4102 area = 442.3388 sq. m		0.0441 hectares				(4761.451 sq. ft.		0.109 acres)					
METES AND BOUNDS													
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric		PARCEL AREA (US)	
07-012.00-037		2-R HENRY F. DUPONT				P/E #1		H20-97		280.7080 h		693.62 A	
ALIGNMENT NUMBER 3000													
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH		RADIUS		
4103	5+92.120	25.398	N 42°39' 11.912" W	3.2339	(10.610)								
4102	5+90.012	15.000	N 58°48' 25.262" E	21.2488	(69.714)								
4201	6+59.726	15.000				N 47°24' 18.844" E	25.1265	(82.436)	25.2932	(82.983)	63.5511	(208.501)	
4202	7+36.739	15.000				N 24°47' 04.270" E	25.4182	(83.393)	25.5813	(83.928)	65.3226	(214.313)	
4203	8+14.793	15.000	N 13°33' 56.110" E	25.9711	(85.207)								
4204	9+00.000	15.000	S 76°26' 03.890" E	0.3048	(1.000)								
4205	9+00.000	16.000	S 13°33' 56.110" W	25.9711	(85.207)								
4206	8+14.793	16.000				S 22°13' 01.259" W	19.7437	(64.776)	19.8190	(65.023)	65.6274	(215.313)	
4207	7+54.602	16.000	S 27°24' 14.212" W	23.5623	(77.304)								
4209	6+87.590	33.994	S 49°29' 40.713" W	22.9301	(75.230)								
4213	6+18.133	43.813	N 85°53' 51.802" W	9.7143	(31.871)								
4103	5+92.120	25.398											
Figure 4103 area = 271.4300 sq. m		0.0271 hectares				(2921.744 sq. ft.		0.067 acres)					

COORDINATE LIST		
PT. NO.	NORTH	EAST
3005	659461. 478	601473. 234
3007	659513. 257	601529. 555
3009	659583. 670	601562. 067
4001	659451. 409	601397. 640
4002	659468. 057	601387. 561
4003	659519. 946	601473. 263
4004	659484. 392	601452. 317
4005	659481. 056	601446. 792
4006	659478. 110	601413. 598
4007	659461. 160	601413. 806
4008	659508. 548	601483. 935
4102	659412. 540	601421. 368
4103	659404. 737	601428. 556
4201	659448. 646	601481. 003
4202	659504. 440	601541. 689
4203	659580. 152	601576. 648
4204	659662. 982	601596. 634
4205	659662. 747	601597. 606
4206	659579. 917	601577. 620
4207	659519. 950	601553. 128
4209	659451. 321	601517. 547
4213	659402. 457	601460. 346
4308	659666. 500	601582. 053
4501	659423. 797	601410. 999

ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	1-085 & 1-086	RIGHT-OF-WAY DATA SHEET SHEET 1 OF 3	SECTION
2 ACQUISITIONS HAVE BEEN COMPLETED. TCE LIMITS HAVE ELAPSED AND WILL NEED TO BE ACQUIRED UNDER THIS REVISION. SEE TABULATION FOR ACQUISITION DEEDS.				T200507103	DESIGNED BY: GCL III / SR			BR
				COUNTY				SHEET NO.
				NEW CASTLE	CHECKED BY: NED	30		

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METES AND BOUNDS											
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric	PARCEL AREA (US)
07-012. 00-037		2-R HENRY F. DUPONT				TCE #1		H20-97		280.7080 h	693.62 A
ALIGNMENT NUMBER		3000									
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH		RADIUS
4219	5+97.137	50.156	N 42°38' 54.135" W	7.6996	(25.261)						
4103	5+92.120	25.398	S 85°53' 51.802" E	9.7143	(31.871)						
4213	6+18.133	43.813	N 49°29' 40.713" E	22.9301	(75.230)						
4209	6+87.590	33.994	N 27°24' 14.212" E	23.5623	(77.304)						
4207	7+54.602	16.000				N 22°13' 01.259" E	19.7437	(64.776)	19.8190	(65.023)	65.6274 (215.313)
4206	8+14.793	16.000	N 13°33' 56.110" E	11.3541	(37.251)						
4214	8+52.044	16.000	S 77°26' 47.244" E	1.2771	(4.190)						
4215	8+52.118	20.189	S 13°33' 56.110" W	11.3767	(37.325)						
4216	8+14.793	20.189				S 22°12' 31.248" W	20.1086	(65.973)	20.1851	(66.224)	66.9042 (219.502)
4217	7+54.660	20.189	S 30°00' 00.902" W	40.6158	(133.254)						
4218	6+43.608	59.240	S 69°52' 03.140" W	14.4326	(47.351)						
4219	5+97.137	50.156									
Figure 4219 area = 175.1122 sq. m		0.0174 hectares		(1884.954 sq. ft.		0.043 acres)					

COORDINATE LIST		
PT. NO.	NORTH	EAST
3015	660408. 216	601830. 208
3017	660476. 669	601891. 210
4103	659404. 737	601428. 556
4206	659579. 917	601577. 620
4207	659519. 950	601553. 128
4209	659451. 321	601517. 547
4213	659402. 457	601460. 346
4214	659616. 129	601586. 358
4215	659615. 118	601590. 447
4216	659578. 935	601581. 693
4217	659517. 856	601556. 756
4218	659402. 454	601490. 128
4219	659386. 157	601445. 671
5001	660430. 897	601807. 921
5002	660530. 754	601787. 531
5003	660551. 953	601829. 199
5004	660491. 573	601863. 001
5101	660483. 742	601937. 721
5102	660463. 333	601898. 076
5103	660476. 222	601941. 592
5107	660380. 170	601836. 737
5108	660377. 903	601842. 753
5110	660269. 114	601794. 881
5113	660461. 990	601914. 580
5201	660274. 757	601779. 909
5203	660438. 773	601810. 994
5204	660481. 825	601847. 049
5206	660497. 078	601930. 855
5207	660402. 926	601844. 244
5209	660269. 467	601793. 945

METES AND BOUNDS												
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric	PARCEL AREA (US)	
07-012.00-073		1-L WYNLEIGH HOMEOWNERS ASSOCIATION INC				TCE #2		2889-0313		5.6698 h	14.01 A	
ALIGNMENT NUMBER 3000												
PT. NO.	STATION	OFFSET	BEARING		DISTANCE		CHORD BEARING		CHORD LENGTH		ARC LENGTH	RADIUS
5001	16+93.496	-29.424	N 11°32' 26.817" W		31.0643 (101.917)							
5002	17+38.965	-105.506	N 63°02' 04.782" E		14.2497 (46.751)							
5003	17+64.608	-96.275	S 29°14' 28.221" E		21.0916 (69.198)							
5004	17+61.328	-27.243	S 58°34' 12.848" W		5.6982 (18.695)							
5204	17+46.094	-29.201					S 39°56' 44.677" W		17.1163 (56.156)	17.4208 (57.155)	26.8224 (88.000)	
5203	17+00.314	-30.271	S 21°18' 55.641" W		2.5768 (8.454)							
5001	16+93.496	-29.424										
Figure 5001 area = 419.9534 sq. m		0.0421 hectares		(4520.489 sq. ft.		0.104 acres)						

METES AND BOUNDS										
ASSESSMENT NUMBER		OWNERSHIP OF RECORD			TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric	PARCEL AREA (US)
07-012.00-037		2-R HENRY F. DUPONT			R/W #2		H20-97		280.7080 h	693.62 A
ALIGNMENT NUMBER 3000										
PT. NO.	STATION	OFFSET	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS		
5209	15+40.000	15.000	N 69°20' 57.056" W	4.5720 (15.000)						
5201	15+40.000	0.000	N 20°39' 02.944" E	43.4715 (142.623)						
3015	16+82.623	0.000			N 41°42' 21.302" E	27.9474 (91.691)	28.5863 (93.787)	38.8952 (127.609)		
3017	17+76.411	0.000	N 62°45' 39.659" E	13.5907 (44.589)						
5206	18+21.000	0.000	S 27°14' 20.341" E	4.5720 (15.000)						
5101	18+21.000	15.000	S 62°45' 39.659" W	13.5907 (44.589)						
5102	17+76.411	15.000			S 41°42' 21.583" W	24.6623 (80.913)	25.2265 (82.764)	34.3232 (112.609)		
5207	16+82.623	15.000	S 20°39' 02.944" W	43.4715 (142.623)						
5209	15+40.000	15.000								
Figure 5209 area = 383.8922 sq. m		0.0384 hectares			(4132.317 sq. ft.		0.095 acres)			

METES AND BOUNDS											
ASSESSMENT NUMBER		OWNERSHIP OF RECORD				TYPE OF ACQUISITION		TITLE SOURCE		PARCEL AREA metric	PARCEL AREA (US)
07-012.00-037		2-R HENRY F. DUPONT				P/E #2		H20-97		280.7080 h	693.62 A
ALIGNMENT NUMBER		3000									
PT. NO.	STATION	OFFSET	BEARING	DISTANCE		CHORD BEARING	CHORD LENGTH		ARC LENGTH	RADIUS	
5110	15+40.000	16.000	N 69°20' 57.056" W	0.3048	(1.000)						
5209	15+40.000	15.000	N 20°39' 02.944" E	43.4715	(142.623)						
5207	16+82.623	15.000				N 41°42' 21.583" E	24.6623	(80.913)	25.2265	(82.764)	
5102	17+76.411	15.000	N 62°45' 39.659" E	13.5907	(44.589)					34.3232	
5101	18+21.000	15.000	S 27°14' 20.341" E	2.5777	(8.457)					(112.609)	
5103	18+21.000	23.457	S 62°12' 53.683" W	9.3058	(30.531)						
5113	17+90.470	23.748	S 40°30' 13.543" W	33.7072	(110.588)						
5108	16+58.682	22.430	N 69°20' 57.056" W	1.9599	(6.430)						
5107	16+58.682	16.000	S 20°39' 02.944" W	36.1743	(118.682)						
5110	15+40.000	16.000									
Figure 5110 area = 214.6655 sq. m		0.0214 hectares		(2310.716 sq. ft.		0.053 acres)					

ADDENDA / REVISIONS		NOT TO SCALE	CULVERT REPLACEMENTS ON N239, PYLES FORD RD	CONTRACT	BRIDGE NO.	1-085 & 1-086	RIGHT-OF-WAY DATA SHEET SHEET 2 OF 3	SECTION
2 ACQUISITIONS HAVE BEEN COMPLETED. TCE LIMITS HAVE ELAPSED AND WILL NEED TO BE ACQUIRED UNDER THIS REVISION. SEE TABULATION FOR ACQUISITION DEEDS.				T200507103	DESIGNED BY: GCL III / SR			BR
				COUNTY				SHEET NO.
				NEW CASTLE	CHECKED BY: NED	31		

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